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CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 1
RMP OVERALL SUMMARY

September 30, 2000

105-06272/

TABLE OF CONTENTS

PART 1 RMP OVERALL SUMMARY

1.1 Strategy at a Glance 3
1.2 Introduction 4
1.3 Overview of Resource Management Issues 4
1.4 Regional Summaries of the RMP Component Data 5
  1.41 Sustainable Harvest Component. 5
    1.4.1.1 Regional Rollup Enhanced Forestry Table. 5
    1.4.1.2 Regional Rollup Backlog Program Table 7
    1.4.1.3 Rollup Performance Measures. 9
    1.4.1.4 Regional List of Proposed Studies. 10
    1.4.1.5 Regional Rollup Summary Table 11
  1.4.2 Current Reforestation. 12
    1.4.2.1 Regional Rollup of Forest Health (general) Planned Activities. 12
  1.4.3 Forest Health Maintenance 13
    1.4.3.1 Regional Rollup of Forest Health Maintenance Activities. 13
  1.4.4 Enhancing Environmental Values 14
    1.4.4.1 Summary of Regional Priority Setting 14
  1.4.5 Non Status Road Deactivation and Rehabilitation 19
    1.4.5.1 Regional Rollup of Data Template identifying high/moderate Priorities. 19
  1.4.6 Forest Service Road Management Program 20
    1.4.6.1 Regional Rollup of FSR Data Template. 20
  1.4.7 Strengthening sustainable Forest Management Component 22
    1.4.7.1 Region Project Summary Table. 22
  1.4.8 Forest Resource Inventory 26
    1.4.8.1 Regional Assessment of Inventory Needs. 26
  1.4.9 Recreation site and Trail Maintenance 27
    1.4.9.1 Regional Rollup of Data Template submitted by Districts. 27
  1.4..10 Research 28

1.1 Strategy at a Glance

Overview	The Resource Management Plan (RMP) addresses land-based activities from the perspective of biological needs and forest resource management priorities. The plan forms a compendium of priorities determined by the Ministry of Forests (MOF), Ministry of Environment, Lands and Parks (MELP) and major licensees, with minimal input from other stakeholders. The RMP is designed to guide Forest Renewal BC and other agencies in determining the best activities for investments, regardless of the funding source or agency actually completing the work.
General Strategy	The Cariboo Forest Region RMP examines land-based resource needs and priorities in terms of: • Commitments, recommendations and links to the Cariboo-Chilcotin Land Use Plan and sub-regional plans. • The long-term resource implications of current investments. • The value, risks and benefits of the various activities and treatments. • The necessary timelines to meet defined resource management objectives. • Delivery recommendations, viable options and consequences of not carrying out the activity. • Consistency within programs and between delivery centres. • Providing resource investment recommendations consistent with FRBC investment principles and ground rules.
Sustainable Harvest	The Cariboo Forest Region has undertaken extensive review and analysis of its long-term timber supply for the Williams Lake, Quesnel and 100 Mile House Timber Supply Areas (TSAs) through the regional Timber Investment Strategy Committee and a Type 2 forest level analysis for the Williams Lake TSA. The reports from these initiatives provide the most reliable framework currently available for the Sustainable Harvest (SH) component of the 2001/2002 RMP. The SH objective focuses on maintaining sustainable harvest levels in the Quesnel, Williams Lake and 100 Mile House TSAs through achieving targets for timber quantity, with the main priority being increasing the available timber supply. However, various opportunities exist in each of the TSAs for increasing timber quality and producing a range of lumber dimensions and quality.
Strengthening Sustainable Forest Management	The Strengthening Sustainable Forest Management (SSFM) strategic objective sets out to meet the definition of sustainable forest management set by the Canadian Council of Forest Ministers in 1992: "management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social and cultural opportunities for the benefit of present and future generations." This will be best achieved by funding projects that develop tools and information for achieving sustainable forest management. The proposed projects followed a process used in the Cariboo Forest Region to develop and prioritize proposed projects. During this process, the concept of sustainable forest management, and the means to strengthen it by recommending priority projects, were kept in the forefront. All management units and the two tree farm licences in the region were eligible landbases for SSFM project proposals.
Enhancing Environmental Values	The main issue and priority for the Enhancing Environmental Values (EEV) strategic objective is the Watershed Restoration Program (WRP). The vision of WRP is to speed the recovery of fish habitat and water quality in priority key watersheds across the province that have been damaged or which are seriously threatened by past forest development activities. All management units (Quesnel, Williams Lake and 100 Mile House TSAs) were eligible for EEV projects, but the majority of priority projects lie in the Quesnel and Horsefly forest districts where the need for WRP work is highest.
Ministry Components	The remaining sections of the RMP are Ministry of Forests components. They have individual objectives that are covered in the respective section.

1.2 Introduction

The 2001/2002 RMP for the Cariboo Forest Region was produced through a consultative and cooperative approach and is presented on behalf of all participants. The RMP was prepared between the beginning of June, 2000 and September 30, 2000. Parts 2 (Sustainable Harvest), 5 (Enhancing Environmental Values) and 8 (Strengthening Sustainable Forest Management) are submitted to Forest Renewal BC for potential FRBC funding. These three sections incorporate widespread perspectives and other input from representatives of the Ministry of Forests, Ministry of Environment, Lands and Parks and forest licensees, with minor input from stakeholders. The remaining parts are submitted by the Ministry of Forests as MOF programs. Overall, this combination of programs and potential funding sources provides a comprehensive resource management plan.

The RMP is a voluminous document but it can be referenced by its individual parts. Each section was produced to serve as a stand-alone document for implementation while contributing in part to the overall plan for the Cariboo Forest Region.

1.3 Overview of Resource Management Issues

Resource management in the Cariboo Forest Region is based on the Cariboo-Chilcotin Land Use Plan (CCLUP). Sub-regional plans, currently in development, will supplement management objectives for more refined planning in future RMPs. Regional timber supply analysis has recently focused on a Type 2 forest level analysis for the Williams Lake Timber Supply Area, the only TSA in the region with a significant projected shortfall. The Type 2 analysis illustrated a more optimistic outlook given the addition to the analysis of the three western supply blocks of this TSA.

Significant resource management issues relating to CCLUP and the timber supply review (TSR) were listed and ranked by a senior managers group for addressing through the SSFM project proposals. The top priority issues, in general, include enhancement strategies, tool development, biodiversity, wildlife, mountain pine beetle and new models for TSR.

Since the EEV strategic objective is entirely directed to the Watershed Restoration Program (WRP), the main issue related issue for this RMP is to recover fish habitat and water quality in damaged or threatened key watersheds. Key buckets are identified for the most beneficial work.

1.4 Regional Summaries of the RMP Component Data

1.41 Sustainable Harvest Component.

1.4.1.1 Regional Rollup Enhanced Forestry Table.

CARIBOO FOREST REGION SUMMARY
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2001/02**	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	13056	10601	9401	8916	8816	25.61	334300
Spacing	3738	3874	3960	3985	4227	484.19	1809900
Pruning	50	65	65	65	65	1099.56	55000
Fertilizing	1450	2100	1800	1630	1600	368.96	535000
Other	300	300	300	300	300	537.17	161159
Totals hectares	18594	16940	15526	14896	15008	155.71	2,895,359
Planning and prescriptions							165900
Total dollars							3,061,259
Forest Health Enhancement							
Spacing	145	145	145	145	145	482.70	70000
Pruning	20	20	0	0	0	999.04	20000
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	165	165	145	145	145	545.26	90,000
Habitat Supply and Biodiversity Enhancement							
Treatments	120	100	100	100	100	833.21	100000
Domestic Range							
Treatments	0	0	0	0	0	0.00	0

Regional Rollup Enhance Forestry Table cont'd

Enhanced Forestry Activities - Management Unit Total

Surveys	13056	10601	9401	8916	8816	25.61	334,300
Spacing	3883	4019	4105	4130	4372	484.13	1,879,900
Pruning	70	85	65	65	65	1,070.83	75,000
Fertilizing	1450	2,100	1,800	1,630	1,600	368.96	535,000
Other stand tending activities	420	400	400	400	400	621.70	261159
Totals hectares	18879	16805	15371	14741	14853	163.43	3,085,359
Planning and prescriptions							165,900
Studies funding							556155
Total dollars							3,807,414

1.4.1.2 Regional Rollup Backlog Program Table

CARIBOO FOREST REGION SUMMARY
Backlog Program Table
For the 2001/02 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2001/02**	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	13321	5541	3960	2944	2841	26.13	348040
Site preparation	242	80	35	50	50	817.30	197800
Planting	398	365	255	190	240	500.74	199150
Brushing	1080	855	666	840	765	548.60	592330
Max. density spacing	310	175	175	175	175	510.46	158250
Totals hectares	15350	7016	5091	4199	4071	97.43	1,495,570
Seed purchase	351000	133000	98000	188000	258000	0.30	107000
Total legal obligations							1,602,570
Backlog Reforestation							
Surveys	33839	26679	23652	22925	22972	25.98	879160
Site preparation	526	311	311	210	200	542.64	285600
Planting	1217	1170	786	535	495	685.10	833843
Brushing	3556	2566	2082	1994	1872	490.58	1744367
Totals hectares	39138	30726	26831	25664	25539	95.63	3,742,970
Seed purchase	722600	607800	273000	363000	361000	0.26	186117
Prescriptions and planning dollars							203500
Total backlog reforestation							4,132,587

Regional Rollup Backlog Table cont'd

Impeded areas

Surveys	11246	10869	10055	9055	7186	27.02	303880
Brushing	3049	2862	1617	1685	1492	466.46	1422000
Density spacing	3247	2486	901	100	0	456.27	1481300
Totals hectares	17541	16217	12574	10840	8678	182.84	3,207,180
Prescriptions and planning dollars							476500
Total impeded areas							3,683,680

Site Restoration

Fill planting	50	50	50	150	150	399.82	20000
Rehabilitation	110	160	110	110	110	881.66	97000
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	160	210	160	260	260	730.95	117,000
Seed purchase	40000	40000	40000	40000	40000	0.40	16000
Prescriptions and planning dollars							30000
Total site restoration							163,000

Backlog Program Activities - Management Unit Total

Surveys	58406	43089	37667	34924	32999	26.21	1531080
Site preparation	878	551	456	370	360	660.79	580400
Planting	1665	1585	1091	875	885	632.48	1052993
Brushing	7684	6283	4366	4519	4129	489.16	3758697
Density spacing	3557	2661	1076	275	175	461.00	1639550
Totals hectares	72190	54168	44655	40963	38548	118.61	8562720
Seed purchase	1113600	780800	411000	591000	659000	0.28	309117
Prescriptions and planning							710,000
Recommended studies							26000
Total backlog program							9,607,837

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1.4.1.3 Rollup Performance Measures.

CARIBOO FOREST REGION SUMMARY
Performance Measures Based on Activities Planned for 2001/2002
Based on Type 1and Type 2 silviculture strategies

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	1,665	0	23,582	878	1,665	7,684	7,440	70	1,450	44,854	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	1	0	0	0.33		
1.2	Years the factor will apply	65	65	70	80	80	75	65	60	60		
1.3	Pot. total merch. volume increment in 65 years (m3)	36,793	0	412,692	0	253,059	576,295	0	0	28,710		**1,307,550**
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			3,747								**3,747**
1.5	Est. area that will be declared as free growing (ha)			10,945								**10,945**
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	2.5	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	166	0	2,358	834	3,330	20,055	18,599	318	261	4,485	
3.3	Estimated total full time equivalent positions (FTE)	1	0	13	5	18	111	103	2	1	25	**280**
4.1	**Forest Health Enhancement (ha)**											**165**
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											**120**
5.3	Est. area with secondary value provided to biodiversity (ha)											**20**

1.4.1.4 Regional List of Proposed Studies.

Rank	Project Name and Short Description	FRBC's Cost 2001/2002
	Site Productivity Adjustment: To review the opportunity to revise the site indices by site series for the whole Cariboo Forest Region	$500 000
	Caribou Habitat Enhancement: Increase available caribou habitat by thinning or rehabilitating over dense pine stands in the west.	$50 000
	Methodology for Identifying Commercial Thinning Opportunities: Create a decision support tool to help locate and evaluate suitable CT areas.	$25 000
	Root Rot Study in Horsefly: Study between the MoF and West Fraser	$7 000

1.4.1.5 Regional Rollup Summary Table.

CARIBOO FOREST REGION SUMMARY

Management Unit Summary Table

For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	17,179	15,115	13,681	13,221	13,363	169	2,906,359
Planning, prescriptions and seedlings							710,055
Backlog Program Field Activities	64,089	0	0	0	0	121	7,737,470
Planning, prescriptions and seedlings							1,010,117
Totals	81,269	15,115	13,681	13,221	13,363		12,364,001

Performance Measures

Potential total merchentable volume increment in 65 years	1,161,867 m^3
Estimated ha that will be reclassified as stocked	3,072 ha
Estimated ha that will be declared as free growing	10,495 ha
Estimated total full time equivalent positions generated	263 FTEs
Forest health enhancement area	165 ha
Planned area for specific wildlife forage or habitat creation	120 ha
Estimated area with secondary value provided to biodiversity	20 ha

1.4.2 *Current Reforestation.*

1.4.2.1 Regional Rollup of Forest Health (general) Planned Activities.

Cariboo Forest Region

Current Reforestation

For the 2001/02 Fiscal Year

		Five-year Plan Goals (ha)					Annual Plan 2001/02		
	Activities	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1	Planning/surveys/prescriptions	846	36	953	142	298	20	17.14	H
2	Site preparation	23	0	5	0	1	0	$10.0	H
3	Planting	23	90	200	200	250	326	$7.5	C
4	Brushing	36	0	0	10	10	440	$15.84	H
5	Max. density spacing	0	100	100	102	100	0	$0.0	
6	Studies	0	0	0	0	0	0	$0.0	
7	Other	0	0	0	0	0	0	$0.0	
	Totals hectares	905	226	1258	454	659	0	$50.48	
	Seed purchase	98200	100000	100000	100000	100000	.26	$26.0	
	Total funding							$76.48	

1.4.3 *Forest Health Maintenance*

1.4.3.1 Regional Rollup of Forest Health Maintenance Activities.

CARIBOO FOREST REGION TOTAL

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

		Five-year Plan Goals					Annual Plan 2001/02		
Activities	**Units**	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	40130	38230	32050	27150	27250	$40	1595	C
2 Defoliator spraying	ha	22700	22700	16700	16700	11700	30	678	C
Totals hectares		62830	60930	48750	43850	38950			
3 Aerial Surveys	hrs flying time	514	525	535	520	520	$473	243	C
4 Fall and burn treatment	trees	25700	20000	18100	15200	14300	54	1396	C
5 Winter Mortality Survey	number	1450	34800	34800	34800	34800	21	30	
6 Pheromone baiting	trees	19775	15000	13600	12200	10800	20	404	C - H
7 Studies	number	7	4	4	4	4	43,995	313	
8 Other - Helilog	trees	14900	15500	13500	11000	10000	56	830	C - H
9 Trap Trees	number	600	600	600	600	600	43	26	H
10 Training	Days	36	36	36	36	36		14	
11 Co-op Hire	number	4	4	4	4	4		60	
Totals		125816	147399	129929	118214	110014		$5,587	

Priority is critical, high, moderate, low

1.4.4 Enhancing Environmental Values

1.4.4.1 Summary of Regional Priority Setting.

Table 3 lists the buckets by forest district and gives the bucket rankings by MELP Fisheries and Water Management, DFO and MOF. The multi-agency ranking was determined as the final step.

Table 3. Cariboo Forest Region key buckets

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Quesnel	John Boyd	493	42,559	H	H	H	H	**H**	West Fraser
	Lightning	494	24,547	H	H	H	H	**H**	Weldwood
	Lower Nazko	381	42,256	H	H	H	H	**H**	
	Willow	103	54,864	H	H	H	H	**H**	Weldwood
	Antler	100	28,342	H	H	H	H	**H**	
	Fontaine	488	7,106	H	H	H	H	**H**	West Fraser
	Clisbako	391	67,444	H	H	H	H	**H**	
	Cunningham	486	16,639	H	L	H	H	**H**	Weldwood
	Swift River	483	39,957	H	L	H	H	**H**	
	Little Swift	490	12,812	H	L	H	H	**H**	Weldwood
	Narcosli	291	25,312	H	H	H	H	**H**	
	Victoria Creek	478	24,572	H	L	H	H	**H**	
	Sovereign	491	12,449	H	L	H	H	**H**	
	Umiti	496	15,256	H	L	H	H	**H**	West Fraser
	Mid Nazko	381a	42,167	H	L	H	H	**H**	
	Big Valley	106	21,655	H	L	H	H	**H**	West Fraser
	Lower Bowron	104	33,572	H	H	H	H	**H**	
	Matthew	489	39,744	H	L	L	H	**H**	Weldwood
	Fraser	283	63,812	L	H	H	H	**H**	
		283a	44,197	L	H	H	H	**H**	
	Ramsay Creek	293	29,206	H	L	H	H	**H**	
	Wentworth	392	15,444	H	L	H	H	**H**	
	Merston	296	27,586	H	H	L	L	**H**	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Quesnel (cont.)	Bazaeko	401	42,820	H	L	H	H	H	
		409	21,006	H	L	H	H	H	
		420	20,508	H	L	H	H	H	
	Tregallis	102	9,445	H	L	H	H	H	
	Ketchum	109	12,826	H	L	L	L	H	West Fraser
	Kimball	487	6,807	H	L	L	H	L	
	Mcfarlane	398	11,326	L	L	H	H	L	
	Snaking	407	17,633	H	L	L	L	L	
	Bazaeko	394	13,917	L	L	H	H	L	
		399	9,944	L	L	H	H	L	
		402	6,734	L	L	H	H	L	
	Coglistiko	414	12,591	L	L	H	H	L	
	Summit	105	6,702	H	L	L	H	L	
	Udy	413	22,145	H	L	L	L	L	
	Webster	289	20,261	L	L	L	L	L	
	Twan	286	36,635	L	L	L	L	L	
	Unnamed	295	6,600	L	L	L	L	L	
	Unnamed	298	9,222	L	L	L	L	L	
Williams Lake	Williams Lake	265a	32,367	H	H	H	H	H	
	Lower Big Creek	142a	26,406	H	H	L	H	H	Riverside
	Lower Churn	243a	30,575	H	H	H	H	H	
	McLeese Lake	290	15,580	H	H	L	H	H	
	Hawks Creek	284	38,379	L	H	H	H	H	
	Fredy/Beedy	462	26,187	H	H	L	L	H	
	Chimney	271	44,212	L	H	L	H	H	
	Mons Creek/Lake	165	7,999	L	H	L	H	H	Riverside
	Cooper Creek	158	10,855	H	H	L	L	L	
	150 Mile	280	26,043	L	H	L	L	L	
	Rose Lake	285	9,963	L	H	L	L	L	
	Upper Churn	243	38,639	H	L	L	L	L	
	Hungry Valley	142	24,745	H	L	L	L	L	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Horsefly	McKinley	445	38,898	H	H	H	H	**H**	Weldwood
	Wolverine	472a	19,535	H	H	H	U	**H**	
	North Arm	464c	36,549	H	H	H	H	**H**	
	Woodjam	451	9,302	H	H	H	H	**H**	
	HorseflyMainstem	453	31,890	H	H	H	U	**H**	Riverside
	Keithley	480	15,090	H	H	H	H	**H**	
	Mid Quesnel River	464a	42,083	H	H	H	U	**H**	
	Likely	464b	67,025	H	H	H	U	**H**	
	Moffat	448	44,562	H	H	H	H	**H**	Weldwood
	Cariboo Lake	472	25,868	H	H	L	H	**H**	Lignum
	Little River	479	38,772	H	L	H	H	**H**	Weldwood
	Bill Miner	464	49,105	H	L	H	H	**H**	
	Rollie	477	6,131	H	L	H	H	**H**	Lignum
	Roaring River	473	19,598	H	L	H	H	**H**	West Fraser
	McKusky	450	32,000	H	L	H	H	**H**	Riverside
	Cameron	485	35,289	H	L	H	H	**H**	Weldwood
	Spanish	468	12,904	H	L	L	H	**H**	
	Sellers	470	8,811	H	L	L	H	**H**	Weldwood
	Polley	463	9,851	H	L	H	U	**H**	West Fraser
	Molybdenite	447	8,222	H	L	H	H	**H**	Weldwood
	Wasko	467	11,350	H	L	H	L	**H**	
	Grain Creek	469	11,378	H	L	H	H	**H**	Weldwood
	Upper Horsefly	455	46,384	L	L	H	H	**H**	Riverside
	Hen Ingram	465	9,131	H	H	L	L	**H**	West Fraser
	Tisdale	452	7,030	H	L	L	L	**L**	
	Watt Creek	475	9,984	L	L	H	H	**L**	
	Beaver Valley	456a	41,538	H	H	L	U	**H**	MELP
100 Mile House	Bonaparte River	77	35,717	H	H	H	H	**H**	Weldwood/Ainsworth/SBFEP
	Young Lake	77a	40,051	H	H	H	H	**H**	Weldwood/Ainsworth/SBFEP
	Fiftyseven Creek	86	12,820	H	H	H	H	**H**	
	Chasm	87	14,903	H	H	H	H	**H**	
	Fiftynine Creek	90	10,952	H	H	H	H	**H**	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
100 Mile House (cont.) (Community Watersheds)	Scott Creek	91	6,261	H	H	H	H	H	
	Rayfield River	93	41,754	H	H	H	H	H	
	Eagan Lake	96	17,264	H	H	H	H	H	
	Cutoff Valley Creek	82	11,922	H	H	H	H	H	
	Clinton	84	14,057	H	H	H	H	H	
	Loon Lake	81	37,580	H	H	L	H	H	
	Brown Creek	95	6,445	H	L	H	H	H	
	Murphy Lake	371	31,490	H	H	L	H	H	
	Bridge	357a	72,753	H	H	L	H	H	Ainsworth/SBFEP
	San Jose	273	12,903	H	H	L	H	H	Weldwood/Ainsworth
	Jim	360	39,828	H	H	L	H	H	Weldwood/Ainsworth/SBFEP
	Gorge Creek/Deadman	78	4,151	H	H	L	H	H	
	Hamilton/Deadman	85	11,419	H	H	L	H	H	
	Lang Lake	371a	27,977	H	H	L	H	H	
	Watch Lake	99	7,834	L	H	L	H	H	
	Lower Bridge/Canim	357	45,152	L	H	L	H	H	
	Bradley	368	23,268	L	H	L	H	H	
	Peach Creek	374	9,443	L	H	L	H	H	
	Coffee	378	11,432	H	L	L	H	H	Weldwood
	Boss	372	13,889	H	L	L	H	H	
	Hendrix	375	15,978	H	L	L	H	H	Weldwood
	Deception	373	32,240	H	L	L	H	H	Weldwood
	Spanish	377	14,876	H	L	L	H	H	
	Joe Ross Cr/Deadman	88	9,548	H	L	L	H	L	
	Green Lake	94	24,916	L	H	L	L	L	
	No name (?) Creek	376	6,083	L	L	L	H	L	
Chilcotin	Chilcotin Lake	124b	30,366	H	H	H	H	H	
	Hanceville	180	26,256	H	H	H	U	H	
	Chilcotin	119	27,669	H	H	H	L	H	
	Alexis Creek	190	31,215	H	H	L	H	H	
	Upper Chilcotin	124	27,252	H	L	H	H	H	
	Haines Creek	171	43,951	L	H	L	H	H	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Cihilcotin cont.	Anaham Creek	185	46,058	L	H	L	H	H	Lignum and Riverside
	Alexis Lakes	187	30,443	L	H	L	H	H	Lignum and Riverside
	Tatlayoko	327	49,023	H	H	L	H	H	Riverside
	Tatlayoko	327a	25,477	H	H	L	H	H	Riverside
	Clusko	130	45,815	H	L	L	H	L	
	Charlotte Lake	70	39,374	L	H	L	L	L	
	Kappan Lake	74	16,911	L	L	L	H	L	
	Scum Lake	171a	18,243	L	L	L	H	L	
	Zenzaco	184	11,965	L	H	L	H	L	
	Avon Creek	188	16,039	L	H	L	H	L	
	Mosley Creek	332a	43,570	H	L	L	L	L	Riverside
	Punkutlaenkut	131	32,943	L	L	H	L	L	
	S. Anahim Creek	186	11,830	L	L	L	H	L	
	Nimpo Creek	194	12,616	L	L	L	L	L	
	Upper Chilcotin	124a	41,653	L	L	L	L	L	

1.4.5 Non Status Road Deactivation and Rehabilitation

1.4.5.1 Regional Rollup of Data Template identifying high/moderate Priorities.

Table 1. Regional summary by program priority

District	Km. NSR	Ha. Landslide	Program Priority	Funding Pressure
Quesnel	73.6		1	$57,897
	628.4		2	$1,307,490
	1,083.7		3	$2,821,706
Horsefly	6		1	$260,000
	101		2	$990,000
	1062		3	$4,262,890
100 Mile House	61		1	$157,950
	50		2	$248,620
	21		3	$142,600
Horsefly	418		VH	$1,875,060
	495		H	2,058,570
	59		M/L	$366,990
100 Mile House	29		VH	$82,120
	101		H	$382,050

1.4.6 Forest Service Road Management Program

1.4.6.1 Regional Rollup of FSR Data Template.

RESOURCE MANAGEMENT PLAN - ENGINEERING PROGRAM

FOR YEAR 2001/2002

CARIBOO FOREST REGION

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS		ESTIMATED COSTS			TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
					BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $				
Fixed Costs (region $):												
Right-of-way acquisition	*40802*	H	NO.		0	0	0		0			
emergency repairs	*40803*	H	NO.		115000	115000	0		115000			
inspection of bridges/major culverts	*40804*	H	NO.		25000	140000	0		25000			
railway crossing maint.	*40805*	H	NO.	1	3500	143500	0		3500			
subtotal					143500		0		143500			
Surface Maintenance +	*40805*	H	KM	362	94500	238000	0	0	94500			
Non Modification Repairs		M	KM	858	87500	325500		0	87500			
(e.g., grading, brushing, cross drain culvert repairs, ditch cleanout, bridge deck cleaning and repair, road surfacing)		L	KM	810	92900	418400		0	92900			
subtotal					274900		0		274900			
Modification-Bridge and	*40806*	H	NO.	7	515000	933400	0	0	515000			
Major Culvert Replacement	*or*	M	NO.	4	104000	1037400		0	104000			
(needs road layout and design)	*40812*	L	NO.	0	0	1037400		0	0			
subtotal					619000		0		619000			

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS	ESTIMATED COSTS				TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
					BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $				
Modification-Other Works (needs road layout and design) (e.g., road relocation, stream culvert replacement, road stability repair)	*40807*	H	NO.	35	202000	1239400	0	0	202000			
		M	NO.	8	270000	1509400		0	270000			
		L	NO.	0	0	1509400		0	0			
subtotal					472000		0		472000			
Road Deactivation	*40808*	H	KM	19	76000	76000	0	0	76000			
		M	KM	0	8000	84000		0	8000			
		L	KM	0	0	84000		0	0			
subtotal					84000		0		84000			
TOTAL					1593400		0		1593400			

1.4.7 Strengthening sustainable Forest Management Component

1.4.7.1 Region Project Summary Table.

Key

Project Status	E=Existing, N=New
Knowledge Investment	E=Organization, synthesis, analysis of existing info; U=Tools, Applications, Extension; N=Field Inventory or Research
Type of Benefit	Reduction of risk to: E=Environmental values, T=Timber resource benefits, NT=Non-Timber benefits.
Scope	# Mus (Mgmt. Units), R=Region, P=Province
Timing	S=Short term (<5 yrs), L=Long term
Probability of Success	H=proven techniques, L=unproven technique or methodology
Funding Sources	RIP=Regional Investment Plan, RE=Research program, HIP=FRBC Headquarters Investment Plan, CLUPE=

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
CCLUP Wildlife and Fisheries	49	Reconnaissance 1:20,000 Fish Inventory	1	E	N	E, T, NT	R	L	CCLUP, TSR	Ongoing	H	RIP	8,000,000	6		$1,500,000	$1,500,000	$1,500,000	$1,500,000	$22,000,000	21	$500,000
CCLUP Tool Development	32	Terrestrial Resource Inventory Mapping (TRIM II)	2	E	U	E, T, NT	R	S	CCLUP, TSR3, Regional	3 years	H	RIP	170,000	2	$500,000	$500,000	$500,000	$500,000		$2,170,000	5	$500,000
Mule Deer	10	MDWR Management Plans	3	E	N	E, T	R	L	CCLUP, TSR	2005	H	RIP		5		$180,000	$180,000	$180,000	$180,000	TBA	TBA	$180,000
CCLUP Biodiversity Targets	7	Old and Mature Definitions	4	E	N	E, T	R	S	CCLUP, TSR	2005	L	RIP	50,000	1		$50,000	$50,000	$50,000	$50,000	$250,000	5	$50,000
Current Management Practices	50	Taper Equations	5	N	E, N	T	R	L	TSR	2002	H	RIP				$20,000				$20,000	1	$0
Caribou	12A	Mt. Tom Adaptive Management	6	E	N	E, T	R	S, L	CCLUP	Ongoing	H	RE, RIP	54,000	2		$50,000	$50,000	$50,000	$50,000	$254,000	5+	$50,000
Caribou	12B	Satah-Chezacut Adaptive Management	7	E	N	E,T	R	S,L	CCLUP	Ongoing	H	RE, RIP	10,000	3		$26,400	$26,400	$26,400	$26,400	$105,560	5+	$26,400
Mule Deer	9	Silv. Systems for Fdi at Viewland Mtn.	8	E	N	E,T	R	S, L	CCLUP	Ongoing	H	RE	80,000		$15,000	$5,000	$36,000	$22,000	$37,000	$199,000		$5,500
Fisheries and Riparian	22	Digital Roll-up Fish Inventory	9	E	E, U	E, T, NT	R	L	CCLUP, TSR	Ongoing	H	RIP	25,000	1		$40,000	$30,000	$20,000		$105,000	4	$40,000

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
Enhancement Strategies	39	TESC	10	N	E, U	T, NT, E	R	S	TSR3, CCLUP, SLUP, LUP	2-5 years	H	RIP	0	0		$500,000	$500,000			$1,000,000	3	$500,000
Current Management Practices	43	OAF for TIPSY	11	N	N	T	R	S	TSR3	1	H	RIP	70,000	1	$70,000	$80,000				$150,000		$80,000
CCLUP Biodiversity Targets	4	Inventory of R - and B.-Listed Species, etc.	12	N	N	E, T, NT	R	S, L	CCLUP, IWMS	2005	H	RIP	app. 190,000	2		$150,000	$200,000	$200,000	$200,000	$940,000	7	$150,000
Other Species	15	Grizzly Bear	13	N	N	E, T	R	S	CCLUP	2005	H	RIP	50,000	1		$100,000	$300,000	$300,000	$300,000	$1,050,000	6	$100,000
Fisheries and Riparian	21	Riparian Buffer Sampling	14	N	N	N, T, E	R	S, L	TSR3, CCLUP, SLUP, LUP	1	H	RIP		1		$50,000				$50,000	1	$50,000
Fisheries and Riparian	24A	Lakes Inventory	15	E	N	E, T, NT	R, P	L	CCLUP, TSR, Lakes class'n.	Ongoing	H	RIP	1,200,000	6		200000'	$200,000	$200,000	$200,000	$2,000,000	20	$0
Fisheries and Riparian	24B	Winter Limnologies	16	E	E	E, T, NT	R	L	CCLUP, TSR, Lakes class'n.	March 31, Ongoing	H	RIP	130,000	15		$15,000	$15,000	$15,000	$10,000	$200,000	20	$0
Current Management Practices	33B	VRI - Williams Lake	17	E	N	T	R	S, L	TSR3, S	2	H	RIP	375,000	4		$75,000				$450,000	4	$140,000
Site Index Impacts	41	G&Y Maintenance	18	E	N	T	R	S, L	S	4+	H	RIP	15,000	1		$15,000	$15,000	$15,000	$15,000	$60,000	5+	$15,000
CCLUP Biodiversity Targets	5	Seral Targets	19	N	E	E,T	R	L	CCLUP, TSR	2002	H	RIP	0	0		$15,000	$0	$0	$0	$15,000	1	$15,000
Fisheries and Riparian	26	Horsefly River Sediment Monitoring	20	E	N	NT	R	S, L	CCLUP	Ongoing	H	RIP	111,280	7		$12,000	$12,000	$12,000	$12,000	$48,000	10	$0
Current Management Practices	33C	VRI - 100 Mile TSA	21	N	N	T	R	S, L	TSR3, S	2	H	RIP	0	0		$150,000	$150,000	$150,000		$450,000	3	$150,000
Current Management Practices	40	Landing Monitoring	22	E	N	E, T, NT	R, P	S, L	TSR2	2002 and ongoing	H	RE, CLUPE, RIP	200,000	4		$40,000	$30,000	$40,000		$310,000	7+	$35,000
Current Management Practices	44	Terrain Stability Mapping	23	N	E	E, T	R	L	CCLUP, TSR	2003	H	RIP	2,500,000	5		$133,807	$133,807			$2,767,614	2	$83,807
Mule Deer	11	Mule Deer in Wetbelt	24	N	U, N	E, NT	R	S, L	CCLUP	2002	H	RIP	0	0		$20,000				$20,000	1	$20,000
Caribou	13	Caribou Strategy	25	E	N	E, T	R	S	CCLUP	2005	H	RIP		5		$310,000	$310,000	$190,000	$130,000	$940,000		$310,000
CCLUP Biodiversity Targets	3	CCLUP Biodiversity Strategy: Patch Size Analysis	26	E	U	T, NT	R	S	TSR, CCLUP	2001	H	RIP				$50,000				$50,000	1	$50,000
CCLUP Biodiversity Targets	8	Seral Contribution of MPB and PFTs	27	N	U,N	T,NT	R	S	TSR3, CCLUP, SLUP, LUP	2001	H	RIP	50,000		$50,000	25,000				25000	1	$25,000

Issue	Project				Knowledge	Benefits			Ability to	Timing	Probability	Potential $	Investment to Date			$ Required					Total Years	Recommended
	#	Name	Rank	Status	Investment	Type	Scope	Timing	Use Knowledge		of Success	Source	$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total	to Complete	Funding
CCLUP Wildlife	45	Terrestrial Ecosystem Mapping	28	N	E	E,T	R	S	CCLUP, TSR	1 year	H	RIP	0	0		$70,000	$0	$0	$0	$70,000	1	$70,000
Site Index Impacts	42	G&Y Re-Measurements	29	E	N	T	R	S, L	TSR3	4+	H	RIP	195,000	1		$100,000	$120,000	$75,000	$80,000	$375,000	5+	$100,000
Current Management Practices	33A	VRI - Quesnel TSA	30	N	N	T	R	S, L	TSR3, S	2	H	RIP	0	0		$150,000	$150,000	$150,000		$450,000	3	$0
Current Management Practices	34	VRI - TFL 5	31	N	U	T, NT	TFL 5	L	TSR, MP	2001	H	RIP	0	0		$75,000				$75,000	1	$75,000
Tool Development	38	Resource Information Management Framework	32	N	U	T, NT	R,P	L	CCLUP, TSR	2003	H	RIP				$95,000	$95,000	$95,000		$285,000	3	$95,000
Other Species	16	Mountain Goat	33	N	N	E	R	S	CCLUP	2005	H	RIP	0	0		$110,000	$60,000	$40,000	$40,000	$250,000	4	$110,000
CCLUP Biodiversity Targets	6	Demo Site for OG Attributes	34	E	U	E	R	S, L	CCLUP	2001/02	H	RIP	3,000	1		$15,000				$18,000	2	$15,000
Other Species	14	Furbearer Inventory	35	E	N	E, T	R	L	CCLUP	2004	L	RIP	170,000	2		$70,000	$70,000	$70,000		$380,000	5	$100,000
Other Species	17	Moose	36	E	N	E, T	S	S	CCLUP	2003	H	RIP				$160,000	$160,000			TBA	TBA	$60,000
Mountain Pine Beetle	46	MPB Workshop	37	N	N	T,NT	R	S,L	CCLUP, TSR	2001	H	RIP				$50,000				$50,000		$0
Other Species	18	Riske Creek Birds	38	N	N	NT	R	L	CCLUP	2003	H	RIP.RE	0		$5,000	$5,000	$5,000			$15,000		$5,000
CCLUP Biodiversity Targets	1	Uniform shelterwood	39	E	N	E, T	R	S, L	CCLUP, TSR	10	H	RIP,RE	73,500		$12,000	$56,000	$40,000	$40,000	$40,000	$261,500		$56,000
Current Management Practices	36	Roads and Landings Area for TSR Netdowns	40	E	U	T	IFPA	L	TSR 2	2001	H	RIP		2	$0	$0					3	$20,000
CCLUP Biodiversity Targets	2	CWD Retention and Recruitment	41	N	N	T, NT	R	S	TSR, CCLUP	2001	H	FRBC	0	0		$30,000				$30,000	1	$30,000
Current Management Practices	47	FBB on Military Reserve	43	N	N	E, T	IDF, R	S	TSR, FPC	2002	H	RIP	0	0		$50,000				$50,000	1	$0
Visual	31	Visual Targets	44	N	N	N,T,E	R	S,L	S	1	H	RIP		1		$50,000				$50,000	1	$0

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
Fisheries and Riparian	28	Automated Water Monitoring Network	45	E	N, U	E, NT	R	S, L	CCLUP, TSR, TFL Mgmt. Plans, Watershed Assessments	Where necessary, stations can be ongoing if operational funding available	H	RIP, RE?, HIP?	559,760 (Includes $200,000 for Needs/Gap Analysis in 1998)	2		$78,760	$78,760	$78,760	51, 880	$847,920	7	$86,410
Fisheries and Riparian	29	Stream Shade	46	N	N	NT	R	S	TSR	5 year	H	RIP	0	5 years required		$19,000	$19,000	$19,000	$19,000	$76,000	5	$19,000
Fisheries and Riparian	23B	Bull Trout Inventory	47	N	N	E, T, NT	R	L	CCLUP, TSR	April/01 to March/04	H	RIP				$150,000	$150,000	$150,000		$450,000	3	$0
Fisheries and Riparian	25	New Water Monitoring Station on Deception Creek	48	N	N	E, t, NT	R	L	CCLUP, TSR	2001	H	RIP				$30,000	$10,000	$10,000	$10,000	$60,000	20	$0
Fisheries and Riparian	23A	Kokanee Inventory	49	N	N	E, T, NT	R	L	CCLUP, TSR	April/01 to March/03	H	RIP	50,000	2		$150,000	$150,000	$150,000	$150,000	$650,000	10	$0
Fisheries and Riparian	27	Penfold Creek Monitoring	50	E	N	NT	P	L	CCLUP	2005	H	RIP	50,000			$90,000	$60,000	$50,000		$250,000		$60,000
Fisheries and Riparian	24C	Lakes Classification	51	E	E	E, T, NT	R	L	CCLUP, TSR, Lakes class'n.	Ongoing	H	RIP	100,000	5		$50,000	$50,000	$50,000	$50,000	$30,000	10	$50,000
Wildcraft Targets	30	Wildcraft	52	N	E, U, N	NT	R	S	CCLUP	3 years	H	RIP	0	0		$10,000	$25,000	$25,000		$60,000	3	$0
Current Management Practices	48	Root Rot Predictor	53	N	N, U, E	T	R	S	TSR	2001	H	RIP				$20,000				$20,000	1	$0
Current Management Practices	51	Deciduous growth/ grazing	NR	E	N, E	T, NT	R	S, L	TSR	2001	H	RIP	20,000	1		$20,000				$40,000	1	$20,000

$4,047,117

1.4.8 Forest Resource Inventory

1.4.8.1 Regional Assessment of Inventory Needs.

1.4.9 Recreation site and Trail Maintenance

1.4.9.1 Regional Rollup of Data Template submitted by Districts.

1.4..10 Research

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 2
SUSTAINABLE HARVEST

September 30, 2000

TABLE OF CONTENTS

PART 2 SUSTAINABLE HARVEST COMPONENT

2.1 REGIONAL SILVICULTURE PRIORITIES AND ISSUES 4
2.2 SUMMARY OF SILVICULTURE PRIORITIES BY MANAGEMENT UNIT 4
  2.2.1 Quesnel TSA 4
  2.2.2 Williams Lake TSA 4
  2.2.3 100 Mile House TSA 5
  2.2.4 TFL 5 5
  2.2.5 TFL 52 5
2.3 QUESNEL TSA SUSTAINABLE HARVEST OUTLINE 6
  2.3.1 Basic Data 6
  2.3.2 Issues 7
2.3.3 OPPORTUNITIES TO INCREASE TIMBER SUPPLY 8
  2.3.4 Opportunities to Increase Timber Quality 10
  2.3.5 Quesnel TSA Sustainable Harvest Data 11
    2.3.5.1 Enhanced Forestry Table 11
    2.3.5.2 Backlog Program Table 13
    2.3.5.3 Performance Measures Based on Activities Planned for 2001/2002 15
    2.3.5.3 Studies Table 17
    2.3.5.5 Quesnel TSA Summary Table 18
2.4 WILLIAMS LAKE TSA SUSTAINABLE HARVEST OUTLINE 20
  2.4.1 Basic Data 20
  2.4.2 Issues 21
  2.4.3 Opportunities to Increase Timber Supply 22
  2.4.4 Opportunities to Increase Timber Quality 29
  2.4.5 Williams Lake TSA Sustainable Harvest Data 29
  2.4.5.1 Enhanced Forestry Table 29
    2.4.5.2 Backlog Program Table 31
    2.4.5.3 Performance Measures Based on Activities Planned for 2001/2002 33
    2.4.5.4 Studies Table 35
    2.4.5.5 Williams Lake TSA Summary Table 36
2.5 100 MILE HOUSE TSA SUSTAINABLE HARVEST OUTLINE 38
  2.5.1 Basic Data 38
  2.5.2 Issues 39
  2.5.3 Opportunities to Increase Timber Supply 40
  2.5.4 Opportunities to Increase Timber Quality 41
  2.5.5 100 Mile House TSA Sustainable Harvest Data 42
    2.5.5.1 Enhanced Forestry Table 42
    2.5.5.2 Backlog Program Table 44
    2.5.5.3 Performance Measures Based on Activities Planned for 2001/2002 46
    2.5.5.4 Studies Table 48
    2.5.5.5 100 Mile House TSA Summary Table 49
2.6 TFL 5 SUSTAINABLE HARVEST OUTLINE 51
  2.6.1 Basic Data 51
  2.6.2 Issues 51
    2.6.2.1 Timber Issues 51
    2.6.2.2 Habitat Issues 52
    2.6.2.3 Employment Issues 52
  2.6.3 Opportunities to Increase Timber Supply 52
  2.6.4 Opportunities to Increase Timber Quality 53
  2.6.5 TFL 5 Sustainable Harvest Data 54
    2.6.5.1 Enhanced Forestry Table 54
    2.6.5.2 Backlog Program Table 56
    2.6.5.3 Performance Measures Based on Activities Planned for 2001/2002 58
    2.6.5.4 Studies Table 60

2.6.5.5 TFL 5 TSA Summary Table 61
2.7 TFL 52 SUSTAINABLE HARVEST OUTLINE 63
2.7.1 Basic Data 63
2.7.2 Issues 63
2.7.3 Opportunities to Increase Timber Supply 63
2.7.4 Opportunities to Increase Timber Quality 63
2.7.5 TFL 52 Sustainable Harvest Data 64
2.7.5.1 Enhanced Forestry Table 64
2.7.5.2 Backlog Program Table 66
2.7.5.3 Performance Measures Based on Activities Planned for 2001/2002 68
2.7.5.4 Studies Table 71
2.7.5.5 TFL 52 Summary Table 72
2.8 CARIBOO REGION SPECIAL STUDIES SUMMARY 74
RANK 74
APPENDIX A. RMP CONTACT AND SUPPORT PERSONNEL 75
APPENDIX B. REFERENCES SUPPORTING THE SUSTAINABLE HARVEST COMPONENT 76

2.1 Regional Silviculture Priorities and Issues

The Cariboo Forest Region has undertaken extensive review and analysis of its long-term timber supply for the Williams Lake, Quesnel and 100 Mile House Timber Supply Areas (TSAs). Inter-agency committees of representatives from the Ministry of Forests (MOF), Ministry of Environment, Lands and Parks (MELP) and industry worked under the Timber Investment Strategy Committee (TISC) initiative from 1996 to early 1999 (CLMA, 1997; Cariboo Forest Region TISC, 1996, 1997; Timberline, 1998a, 1998b, 1999). As well, the Williams Lake TSA has undergone an additional Type 2 forest level analysis (Inland Timber Management, 2000) that assessed the impact of implementing various incremental silviculture scenarios. That report and those from TISC provide the most reliable framework currently available for the Sustainable Harvest component of the 2001/2002 Resource Management Plan.

Maintaining sustainable harvest levels in the Quesnel, Williams Lake and 100 Mile House TSAs is more a matter of timber quantity than quality, with the main priority being increasing the available timber supply. However, various opportunities exist in each of the TSAs for increasing timber quality and producing a range of lumber dimensions and quality.

Density management is the most assured means of increasing long-term harvest levels, based on local experience and modelling results. Through planting and juvenile spacing, second growth stands are able to reach target piece size without the threat of overcrowding and reduced stem diameter growth. Density management is therefore regarded as an effective means of moderating the adjustment to the long-term harvest level and improving timber supply, while ensuring that appropriate log sizes are available at rotation. Fertilization of managed stands is considered to be an effective means of improving the mid- to long-term timber supply.

2.2 Summary of Silviculture Priorities by Management Unit

2.2.1 Quesnel TSA

Increasing the timber supply is the main priority for maintaining sustainable harvest levels in the Quesnel TSA. Current target rotations within the Quesnel TSA allow for a range of piece size objectives. The relatively stable wood flow within the TSA allows for considerations on improving wood quality. Licensees are currently including pruning for wood quality on a percentage of their areas with high site index.

2.2.2 Williams Lake TSA

The critical need to offset the short-term decline in timber supply, the predominant issue in the 2000/2001 RMP, has been significantly modified through further analysis. The addition of 745,540 ha of low site lodgepole pine significantly expands the Timber Harvesting Land Base, which substantially improves the current age class distribution and eliminates the short-term falldown projected in TSR1 (Inland Timber Management, 2000).

Nevertheless, target rotations will allow for a range of piece size objectives. During periods of severely constrained wood flow, it is expected that the average piece size will decrease near minimums of 12.5 cm for lodgepole pine and 17.5 cm dbh for other species.

Enhancing timber quality is not a priority for the Williams Lake TSA.

2.2.3 100 Mile House TSA

There is a need to offset the minor short-term decline in timber supply (3%) in decades 3-6 for the 100 Mile House TSA. This objective is the focus of the incremental silviculture program and the Sustainable Harvest plan, and is likely to continue until the timber supply falldown is resolved. Enhancing timber quality is not a predominant issue.

Nevertheless, target rotations will allow for a range of piece size objectives. During periods of severely constrained wood flow, it is expected that the average piece size will decrease near minimums of 12.5 cm for lodgepole pine and 17.5 cm dbh for other species.

2.2.4 TFL 5

Further information provided under Section 2.6

2.2.5 TFL 52

No strategic silviculture analysis information was available at the time of plan preparation. TFL 52 will be under going a Type 2 Strategic Analysis during fiscal 2000/01.

2.3 Quesnel TSA Sustainable Harvest Outline

2.3.1 Basic Data

The Quesnel Timber Supply Area is the most northern TSA in the Cariboo Forest Region, located in the central interior of British Columbia. The TSA's climate varies from generally dry and cold in the west, due to the rainshadow influence of the Coast Mountains and Itcha-Ilgachuz Range, to milder and wetter towards the east where airflow rises over the Quesnel Highland. The Fraser River valley through the middle of the area is dry and warm. The area has a diverse range of ecosystems with extensive wetlands and waterbodies and rolling topography intersected by major valleys.

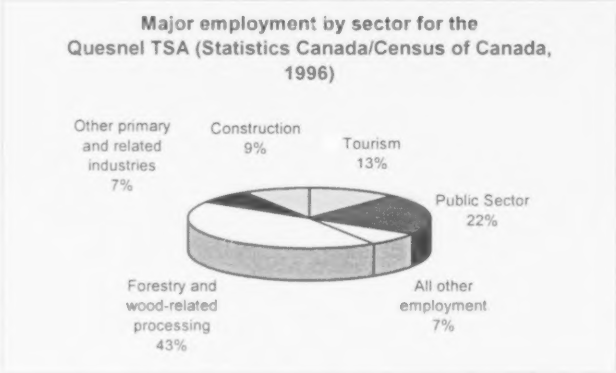

Figure 1. Major employment by sector for the Quesnel TSA

From the city of Quesnel, the TSA stretches west past the community of Nazko to Eliguk Lake northwest of the Itcha-Ilgachuz Range, and east past Wells and Barkerville to the Bowron Lakes Provincial Park. The area also encompasses nine First Nations communities. The TSA covers 1.65 million ha, with approximately 81% as productive Crown forest (Pedersen, 1996a). Deductions to the productive forest land base, primarily due to problem forest types, habitat exclusions and environmentally sensitive areas, are shown in the Quesnel TSA Timber Supply Analysis of 1994 to bring the current harvesting landbase to 1.02 million ha, or 62% of the total landbase.

Figure 1 provides a summary of major employment by sector, and Figure 2 shows the age class distribution for the Quesnel TSA.

The allowable annual cut (AAC) was affected by outbreaks of mountain pine beetle in the early 1980's, requiring beetle control and salvage harvesting, as well as the operability of problem forest types and deciduous forest types. The current AAC of 2,340,000 m^3, set on November 9, 1995, is comprised of four components:

- Coniferous stands in the main TSA (1,965,500 m^3);
- Problem forest types (300,000 m^3);
- Deciduous volume partition (40,000 m^3); and
- Woodlots (34,500 m^3);

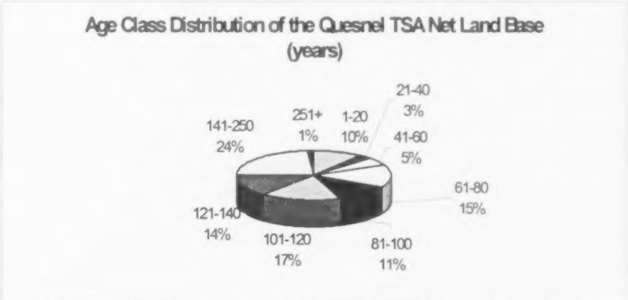

Figure 2. Age class distribution of the Quesnel TSA net land base.

The second Timber Supply Review (TSR2) is receiving public input from the June 1999 Information Report (BC Ministry of Forests, 1999a). The timber supply analysis will likely be available for public review in spring 2001, followed by the chief forester's revised AAC determination.

2.3.2 Issues

Table 1 lists 16 issues relevant to the Quesnel TSA regarding sustainable harvest. The list was produced from the TSR1 AAC rationale (Pedersen, 1996a) and the TSR2 data package for the Quesnel TSA (BC Ministry of Forests, 1999b), with additional input from MELP staff.

Table 1. Sustainable harvest issues for the Quesnel TSA

Issue	Comments
Cariboo-Chilcotin Land Use Plan	The Cariboo-Chilcotin Land Use Plan (CCLUP) was announced by government in October, 1994 and adopted by Cabinet as a Higher Level Plan, with later amendment effective July 31, 1999. Management prescriptions contained in the CCLUP strategy reports have been modified by the Integration Report and are considered key information sources in Forest Development Plan direction. The TSR2 process relies on CCLUP information for the modeling of some prescriptions or constraints, which will affect long-term timber supply considerations in the RMP.
Landscape-level biodiversity	Landscape level biodiversity direction provided by the 1998 statutory decision maker letter reflects current practices, and will be used in developing the base case for TSR2. Practices are to be consistent with the *CCLUP Biodiversity Conservation Strategy* as influenced by the *CCLUP Integration Report* and the *Cariboo Region Landscape Unit Planning Strategy*.
Stand-level biodiversity	Wildlife tree patches are planned to reduce impact on the productive forest areas as much as possible.
Pulpwood Agreement (PA) #5	No harvesting is anticipated for PA #5 in the near future.
Problem Forest Types	TSR1 included a partition of 300,000 m^3/year for problem forest types (PFTs). Forest cover information was adjusted based on the results of an inventory study conducted in 1997. The inventory information was developed to allow a separate assessment of the PFTs for TSR2.
Mountain pine beetle salvage harvesting	Recent increases in salvage requirements may affect short-term harvest levels and longer-term timber supply.
Old Growth Site Index/Site productivity	Current research shows that the site indices for stands older than 140 years are below actual productivity. Until regional information is available, the provincial site index adjustments will be applied as a sensitivity analysis in TSR2.
Goal 2 protected area candidates	These areas are still proposed and will be relocated through sub-regional planning. Goal 2 areas are not incorporated into the base case for TSR2. These areas amount to 0.25% of the timber harvesting landbase of the total CCLUP area, but their locations are unclear as well as how much of the TSA will be designated as protected areas. TSR2 will determine the potential impact on timber supply through a sensitivity analysis.
Deciduous component in the timber supply	A portion of the TSA was re inventoried in 1997. This information will improve the assessment of the deciduous component in TSR2.
Not satisfactorily restocked (NSR) areas	In 1999 there were 4698 ha of backlog NSR and 18,328 ha of current NSR area. TSR2 will model the restocking of current NSR within the regeneration delay, and the backlog NSR within 10 years.
Species conversion	TSR1 raised species conversion as an issue requiring further assessment. Inability to link original forest cover information to current forest cover frustrated the analysis, but species conversion is not considered a major problem for TSR2. Fill and incremental planting treatments should consider this issue.
Cariboo River Management Area	No more than 15% of the productive forest area may be below the green-up height to ensure sufficient moose habitat is maintained.

Issue	Comments
Wildlife habitat	Current caribou habitat management direction permits harvesting in 35% of the previously deferred area, but confirmation will depend on results of research underway on partial cuts to maintain terrestrial lichens. Eastern caribou habitat is restricted from harvesting, pending the results of ongoing research on group selection systems to maintain arboreal lichens and the implementation of the caribou strategy. The mule deer winter range strategy for harvesting in the IDF allows for no harvesting on some ranges, with limited selection harvesting and extended rotations on others. Exceptions are allowed to address mountain pine beetle salvage. Clumpy spacing is recommended in Douglas-fir – leading immature stands where enhanced forestry activities are proposed. For grizzly bear, moose, furbearer, species at risk, implementation strategies for CCLUP requirements to manage for these species' habitat are being developed on an ongoing basis; for enhanced forestry activities, standards for maintaining habitat supply will include considerations for these species.
Riparian habitat	The inclusion of riparian reserves and management zones may reduce the productive forest land area with potential impact on the availability of mature volume for harvesting.
Green-up	The current minimum height requirement of 3 m to achieve green-up currently equates to an age of 17 to 22 years. Spruce stands may not be achieving that prediction, however, and OGSI may calculate stands reaching 3 m in less time. The effects on long-term timber availability are included as a high priority study in the Sustainable Harvest strategic objective.
Community dependence	As shown on page 1 under Basic Data, over 1/3rd of total employment in the TSA relies directly on the forest industry. Public input is most prominent on this socio-economic issue. Future Timber Supply Reviews and AAC determinations will need to balance timber availability with community dependence and opportunities for development of alternate economic bases.

2.3.3 Opportunities to Increase Timber Supply

The Stand Treatments Analysis report for the Quesnel TSA (Timberline, 1998a) outlines the methodology used in the timber supply analysis. FSSIM 3.0, a forest-level simulation model, predicted the development of a forest over a 250-year planning horizon based on initial forest conditions, expected patterns of growth, harvesting and regeneration rules, and assumptions for non-timber resources. A list of the analysis options, with a brief description of each and its effect on timber supply, is provided in Table 2 to demonstrate the breadth of scenarios tested and examined.

Table 2. Analysis options and their effect on timber supply for the Quesnel TSA (Timberline, 1998a)

Analysis Option	Description	Effect on Timber Supply
Base Case	The management assumptions, land base net downs, general growth and yield parameters and forest cover requirements from TSR1 were used, with some minor changes to the development of analysis units to better reflect anticipated TSR2.	The indicated current harvest level of 2,340,000 m^3/year for the main TSA is sustainable over an even flow planning horizon, and could increase up to 20% by using managed stand yields. The uneven flow analysis resulted in a short term harvest of 3,902,000 m^3/year, dropping over 4 decades to a long-term harvest level of 2,723,100 m^3/year, which can be sustained through the entire 250-year planning horizon.
Old Growth Site Index adjustments	OGSI adjustment equations, including SIBEC, were used to more accurately assess productivity of stands older than 140 years.	Produces a long-term harvest gain of 12% for the even flow scenario, and 10% short-term and 5% long-term gains for the uneven flow scenario.

Analysis Option	Description	Effect on Timber Supply
Reduced Regeneration Delay	The regeneration delay for all current and backlog NSR was reduced by 2 years.	Reducing regeneration delay for all current NSR improves the mid- and long-term gains by 3%.
Problem Forest Type Rehabilitation	Limits to area harvested were removed to determine the impact of the transition from PFT to managed stands. All stands were assumed to regenerate to lodgepole pine.	Produces a 3% gain in the even flow scenario, and a 5% gain in the short term in the uneven flow scenario.
Genetically Improved Planting Stock	Site index was adjusted by 3%, 5% and 7% to represent a range of expected responses to tree improvement gains by using genetically improved lodgepole pine and white spruce.	Produces a 5% to 7% gain under the even flow scenario, a 10% to 15% short-term gain and a long-term volume gain of up to 4% above base case for the uneven flow scenario.
Density Management	Spacing to three densities: 1200, 2400 and 3600 stems per ha.	Produces a 3% to 7% gain in the even flow scenario and a short-term gain of 5% - 14% under the uneven flow scenario.
Reducing Lost Productive Area from Future Roads	Reduction of current and future lost productive area to roads and landings by 50%.	Produces a 3% gain in the even flow analysis, and a 9% gain in the short term for the uneven flow analysis.
Fertilization and Spacing	Volume of all eligible lodgepole pine managed stands was increased by 15 and 40 m^3/ha at rotation to reflect gains from one and two fertilization treatments, respectively.	Even flow gain of 8% and 10%, and uneven flow short term gain of 5% and 10% for the combined treatments.
Elimination of Backlog NSR	The base case scenario of 10 years to eliminate all backlog NSR (areas harvested before 1987) was reduced to 0 years.	Regenerating all backlog NSR immediately produces a 2% gain for the even flow scenario, and a 4% short-term gain for the uneven flow scenario.
Commercial Thinning	One-pass volume removal of 30% from 40 – 60 year old natural and managed Douglas-fir and lodgepole pine stands on good and medium sites. In this analysis, spacing to 2400 stems per hectare was used as the base case. Final harvests were delayed for a minimum of 20 years after thinning.	Marginal gains are realized under the even flow scenario. A short-term gain of 5% is achieved under the uneven flow scenario.
Combination of Commercial Thinning and Fertilization	The same commercial thinning methodology is modeled as above with fertilization responses of 15 and 40 m^3/ha for one and two applications.	One and two fertilizer applications produced gains of 2% and 3%, respectively, under the even aged analysis, and 7% and 10%, respectively, under uneven flow.

The Stand Treatments Analysis report also lists the changes in harvest level compared to the base case for all tested treatments and treatment regimes for the TSA (Table 3). Two timber flow alternatives were used to evaluate stand treatments—even flow and uneven flow. In all phases of the analysis, the harvest flow objectives were to:

- begin at as high a harvest level as possible;
- sustain the initial harvest level for as long as possible;
- achieve short and mid-term harvest levels that do not drop below a minimum long-term sustainable level;
- raise the long run sustainable harvest levels to reflect managed stand yields; and
- limit shifts in harvest to less than 10% per decade.

Table 3. Analysis results for even flow and uneven-flow (short term and long term) scenarios for the Quesnel TSA (Timberline, 1998a)

			Uneven Flow			
	Even Flow		Short Term		Long Term	
Scenario	Harvest (000's m3/ha)	Change from Base Case	Harvest (000's m3/ha)	Change from Base Case	Harvest (000's m3/ha)	Change from Base Case
Base Case	2723	n/a	3902	n/a	2723	n/a
OGSI Adjustments	3006	12%	4256	10%	2841	5%
Reduced Time to Regenerate Backlog NSR	2770	2%	4044	4%	2723	0%
Reduced Regeneration Delay by 2 years	2794	3%	4079	5%	2723	0%
Genetically Improved Stock; Low (3%)	2841	5%	4256	10%	2723	0%
Genetically Improved Stock; Moderate (5%)	2888	7%	4433	15%	2723	0%
Genetically Improved Stock; High (7%)	2935	9%	4433	15%	2817	4%
Density Management; 3600sph	2794	3%	4079	5%	2723	0%
Density Management; 2400sph	2888	7%	4398	14%	2723	0%
Density Management; 1200sph	2865	6%	4256	10%	2723	0%
Fertilization; redefined Base Case	2888	n/a	4398	n/a	2723	n/a
One Application; 15 m^3/ha increase	2912	8%	4433	5%	2723	0%
Two Applications; 40 m^3/ha increase	2959	10%	4610	10%	2723	0%
PFT Rehabilitation	2794	3%	4079	5%	2723	0%
Rehabilitate 50% of Roads and Landings	2794	3%	4221	9%	2723	0%
Commercial Thinning; redefined Base Case	2888	n/a	4398	n/a	2723	n/a
Commercial Thinning	2912	1%	4610	5%	2723	0%
Commercial Thinning and Fertilization; redefined Base Case	2888	n/a	4398	n/a	2723	n/a
Commercial Thinning and Fertilization; One application; 15 m^3/ha increase	2935	2%	4681	7%	2723	0%
Commercial Thinning and Fertilization; Two applications; 40 m^3/ha increase	2959	3%	4786	10%	2723	0%

2.3.4 *Opportunities to Increase Timber Quality*

Pruning is well documented as a treatment to improve timber quality (BC Ministry of Forests, date unknown; Barber, 1997). Other technical sources include the Technical Background Information, Timber Enhancement Strategy report, prepared by the Cariboo Lumber Manufacturers' Association (1997), that summarizes technical information on silviculture treatment benefits. The report lists pruning of young stands as a means to improve stem quality and log value at harvest. Stands most eligible for pruning have a high site index, developed access and close proximity to manufacturing facilities.

Some pruning has occurred in the Quesnel TSA and a moderate level of pruning activity is expected to continue to address anticipated future demand for veneer and value added products.

2.3.5 Quesnel TSA Sustainable Harvest Data

2.3.5.1 Enhanced Forestry Table

Quesnel TSA SH Summary
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2001/02**	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	4650	3650	2950	2950	2850	20.84	96900
Spacing	1030	880	730	730	730	464.47	478400
Pruning	50	50	50	50	50	1099.96	55000
Fertilizing	1000	1700	1400	1400	1400	385.00	385000
Other	0	0	0	0	0	0.00	0
Totals hectares	6730	6280	5130	5130	5030	150.86	1,015,300
Planning and prescriptions							51,900
Total dollars							1,067,200

Forest Health Enhancement

	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Spacing	0	0	0	0	0	0.00	0
Pruning	20	20	0	0	0	999.85	20000
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	20	20	0	0	0	999.45	20,000

Habitat Supply and Biodiversity Enhancement

	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Treatments	0	0	0	0	0	0.00	0

Domestic Range

	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	4650	3650	2950	2950	2850	20.84	96,900
Spacing	1030	880	730	730	730	464.46	478,400
Pruning	70	70	50	50	50	1,071.35	75,000
Fertilizing	1000	1,700	1,400	1,400	1,400	385.00	385,000
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	6750	6300	5130	5130	5030	153.38	1,035,300
Planning and prescriptions							51,900
Studies funding SIA/SIBEC							145087
Total dollars							1,232,287

2.3.5.2 Backlog Program Table

Quesnel TSA SH Summary

Backlog Program Table

For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	159	172	106	50	50	20.00	3180
Site preparation	142	0	0	0	0	899.99	127800
Planting	151	175	100	50	50	364.24	55000
Brushing	46	126	111	205	130	349.98	16100
Max. density spacing	0	0	0	0	0	0.00	0
Totals hectares	498	473	317	305	230	405.77	202,080
Seed purchase	188000	0	0	0	0	0.38	71000
Total legal obligations							273,080
Backlog Reforestation							
Surveys	9100	6350	6600	6400	7000	20.07	182600
Site preparation	90	70	70	70	70	811.09	73000
Planting	166	253	70	70	70	412.04	68400
Brushing	700	550	550	550	450	564.28	395000
Totals hectares	10056	7223	7290	7090	7590	71.50	719,000
Seed purchase	109000	0	0	0	0	0.25	27250
Prescriptions and planning dollars							44500
Total backlog reforestation							790,750
Impeded areas							
Surveys	3000	2500	2500	2500	2500	20.00	60000
Brushing	1020	880	520	420	420	460.78	470000
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	4020	3380	3020	2920	2920	131.84	530,000
Prescriptions and planning dollars							30000
Total impeded areas							560,000
Site Restoration							
Fill planting	0	0	0	0	0	0.00	0
Rehabilitation	0	0	0	0	0	0.00	0
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total site restoration							0
Backlog Program Activities - Management Unit Total							
Surveys	12259	9022	9206	8950	9550	20.05	245780
Site preparation	232	70	70	70	70	865.49	200800
Planting	317	428	170	120	120	389.26	123400
Brushing	1766	1556	1181	1175	1000	498.92	881100
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	14574	11076	10627	10315	10740	99.57	1451080
Seed purchase	297000	0	0	0	0	0.33	98250
Prescriptions and planning							74,500
Recommended studies	SIBEC (TOLKO)						26000
Total backlog program							1,649,830

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.3.5.3 Performance Measures Based on Activities Planned for 2001/2002

Quesnel TSA SH Summary

Performance Measures Based on Activities Planned for 2001/2002

Based on Type 2 silviculture strategy

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	317	0	5,580	232	317	1,766	1,030	70	1,000	10,312	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	1	0	0	0.33		
1.2	Years the factor will apply	80	80	70	80	80	75	65	60	60		
1.3	Pot. total merch. volume increment in 65 years (m3)	8,623	0	97,650	0	48,186	132,450	0	0	19,800		306,708
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			757								757
1.5	Est. area that will be declared as free growing (ha)			2,535								2,535
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	2.5	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	32	0	558	220	634	4,609	2,575	318	180	1,031	
3.3	Estimated total full time equivalent positions (FTE)	0	0	3	1	4	26	14	2	1	6	56
4.1	**Forest Health Enhancement (ha)**											20
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

2.3.5.3 Studies Table

See section 2.8 Cariboo Region Special Studies Summary

2.3.5.5 Quesnel TSA Summary Table

Quesnel TSA SH Summary
Management Unit Summary Table
For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	6,750	6,300	5,130	5,130	5,030	153	1,035,300
Planning, prescriptions and seedlings							196,987
Backlog Program Field Activities	14,574	0	0	0	0	100	1,451,080
Planning, prescriptions and seedlings							198,750
Totals	21,324	6,300	5,130	5,130	5,030		2,882,117

Performance Measures

Potential total merchentable volume increment in 65 years	306,708 m^3
Estimated ha that will be reclassified as stocked	757 ha
Estimated ha that will be declared as free growing	2,535 ha
Estimated total full time equivalent positions generated	56 FTEs
Forest health enhancement area	20 ha
Planned area for specific wildlife forage or habitat creation	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

2.4 Williams Lake TSA Sustainable Harvest Outline

2.4.1 Basic Data

The Williams Lake Timber Supply Area is located in a roughly middle east-west band of the Cariboo Forest Region in the central interior of British Columbia. The TSA's climate varies from generally dry and cold in the west due to the rainshadow influence of the Coast Mountains, to milder and wetter where airflow rises due to the Quesnel Highland to the east, with a very dry and warm Fraser River valley between. The area has a diverse range of ecosystems with extensive grassland areas and wetlands, and rolling topography intersected by major valleys.

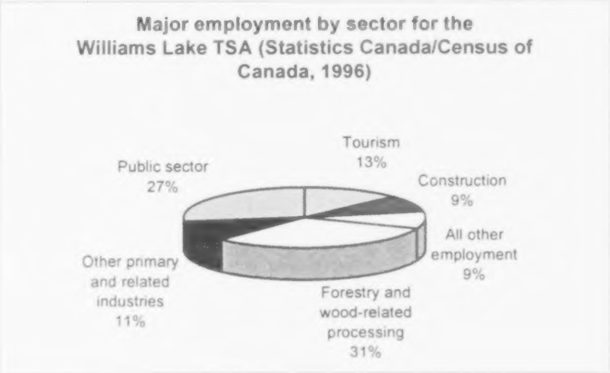

Figure 3. Major employment by sector for the Williams Lake TSA.

From the city of Williams Lake, the TSA stretches west past the communities of Alexis Creek and Anahim Lake to Tweedsmuir Provincial Park, and east beyond Horsefly and Likely to Wells-Gray Provincial Park. The area also encompasses ten First Nations communities. The three forest districts within the TSA—Chilcotin district (based in Alexis Creek), Williams Lake and Horsefly—cover 4.9 million ha, with approximately 69% as productive Crown forest. Deductions to the productive forest land base, primarily due to problem forest types, bring the current harvesting landbase to 1.7 million ha, or 34% of the total landbase. The Williams Lake TSA is commonly addressed in two portions—the main TSA and the more remote three western supply blocks.

Figure 3 provides a summary of major employment by sector, and Figure 4 shows the age class distribution for the Williams Lake TSA.

The allowable annual cut has been affected for the last 20 years by outbreaks of mountain pine beetle and the need for beetle control and salvage harvesting. The current AAC of 3,807,000 m^3, set on January 1, 1996, is comprised of four components:

- Coniferous stands in the main TSA (2,500,000 m^3), with at least 100,000 m^3 annually from problem forest types
- The three western supply blocks (350,000 m^3)
- Problem forest types in Pulpwood Agreement #16 (107,000 m^3)
- Stands damaged or killed by mountain pine

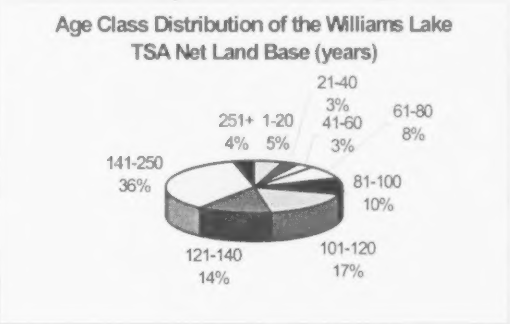

Figure 4. Age class distribution of the Williams Lake TSA net land base

beetle (850,000 m^3)

The second Timber Supply Review (TSR2) is receiving public input from the August 1999 Information Report (BC Ministry of Forests, 1999d) in spring 2001, followed by the chief forester's revised AAC determination.

2.4.2 Issues

Table 4 lists 16 issues affecting timber supply from the perspectives of timber quality and quantity, forest health and habitat supply. They are summarized from the TSR1 AAC rationale (Pedersen, 1996b) and the TSR2 data package (BC Ministry of Forests, 1999c) for the Williams Lake TSA, with additional input from MELP staff.

Table 4. Sustainable harvest issues for the Williams Lake TSA.

Issue	Comments
Cariboo-Chilcotin Land Use Plan	The CCLUP was announced by government in October, 1994 and adopted by Cabinet as a Higher Level Plan with later amendment effective July 31, 1999. Management prescriptions contained in the CCLUP strategy reports have been modified by the Integration Report and are considered key information sources in Forest Development Plan direction. The TSR2 process relies on CCLUP information for the modeling of some prescriptions or constraints, which will affect long-term timber supply considerations in the RMP.
Landscape-level biodiversity	Seral stage distribution targets recommended in the *Biodiversity Conservation Strategy* will be used for achieving biodiversity objectives outlined in the CCLUP.
Stand-level biodiversity	Wildlife tree patches are planned to reduce impact on the productive forest area as much as possible.
Pulpwood Agreement #16 timber supply	107,000 m^3/year was partitioned in TSR1 for PA #16. These forest types will be segregated for TSR2.
Problem Forest Types	TSR1 included a partition of at least 100,000 m^3/year from PFT's. The new "marginal forest types" classification consists of stands likely be harvested and subsequently contributing to TSA harvest levels. Requires impact assessment regarding landscape biodiversity targets.
Mountain pine beetle salvage harvesting	New criteria for stands damaged or killed by mountain pine beetle are in use to address biodiversity objectives. Recent increases in salvage requirements, however, may affect short-term harvest levels and longer-term timber supply.
Inventory audit	A 1998 inventory audit of the TSA showed that the inventory may overestimate mature volumes by 13% for all species groups. Polygon volumes consistently overestimated in the SBS and IDF zones. Volumes in other zones may be under-estimated. TSR2 will include further review of the audit information and consideration of forest management practices.
Old Growth Site Index	Current research shows that site indices for stands older than 140 years are below actual productivity. Until regional information is available, the provincial site index adjustments will be applied as a sensitivity analysis in TSR2.
Lignum Innovative Forest Practices Agreement	The IFPA gives Lignum the opportunity to test innovative forestry practices for increasing AAC and implementing successful practices in the TSA.
Anahim Round Table consensus document	Until the ART sub-regional plan is finalized, river buffers identified in the ART document may be modeled in a sensitivity analysis.
Goal 2 protected area candidates	The remaining .25% of the TSA for designation as protected areas may be used to determine potential impact on timber supply through a sensitivity analysis.
Visually sensitive areas	Partial retention was used as the Visual Quality Objective in TSR1, but anticipated tourism pressures may find this to have overestimated the timber supply, particularly in the eastern portion of the TSA.

Issue	Comments
Wildlife habitat	Western caribou habitat requirements reduce harvesting to 35% of area, but confirmation will depend on results of research underway on partial cuts to maintain terrestrial lichens. Eastern caribou habitat is deferred from harvesting until 2008, pending the results of ongoing research on group selection systems to maintain arboreal lichens and the implementation of the caribou strategy. Mule deer winter range strategy for harvesting in the IDF allows for no harvesting on some ranges with limited selection harvesting and extended rotations on others. Grizzly bear, moose, furbearer, species at risk – implementation strategies for CCLUP requirements to manage for habitat for these species are being developed on an ongoing basis; for enhanced forestry activities, standards for maintaining habitat supply will include considerations for these species.
Riparian habitat	The inclusion of riparian reserves and management zones may reduce the productive forest land area with potential impact on the availability of mature volume for harvesting.
Green-up	The current minimum height requirement of 3 m to achieve green-up currently equates to an age of 17 – 22 years. Spruce stands may not be achieving that prediction. OGSI may calculate stands reaching 3 m in less time. The effects on long-term timber availability will be included as a high priority study in the Sustainable Harvest strategic objective.
Community dependence	As shown on page 1 under Basic Data, approximately 1/3rd of total employment in the TSA relies on the forest industry. Public input is most prominent on this socio-economic issue. Future Timber Supply Reviews and AAC determinations will need to balance timber availability with community dependence and opportunities for mitigating projected falldowns with development of alternate economic bases.

2.4.3 Opportunities to Increase Timber Supply

The Stand Treatments Analysis report for the Williams Lake TSA (Timberline, 1999) outlines the methodology used in the timber supply analysis. FSSIM 3.0, a forest-level simulation model, predicted the development of a forest over a 250-year planning horizon based on initial forest conditions, expected patterns of growth, harvesting and regeneration rules, and assumptions for non-timber resources. A list of the analysis options with a brief description of each and its effect on timber supply is provided in Table 5 to demonstrate the breadth of scenarios tested and examined.

The Williams Lake TSA has undergone an additional Type 2 forest level analysis (Inland Timber Management, 2000) that assessed the impact of implementing various incremental silviculture scenarios. Analysis of the effects of silviculture scenarios on sustainable harvest volume are summarized in Table 6. The reports by Inland Timber Management and TISC provide the most reliable framework of technical information that is currently available.

Table 5. Analysis options and their effect on timber supply for the Williams Lake TSA (Timberline, 1999)

Analysis Option	Description	Effect on Timber Supply
Base Case	The management assumptions, land base netdowns, general growth and yield parameters and forest cover requirements from TSR1 were used, with some minor changes to the development of analysis units to better reflect anticipated TSR2.	The indicated current harvest level of 2,670,000 m^3/year for the main TSA will decrease 30% by decade 5. A long-term harvest level of 1,971,000 m^3/year starting at decade 10 can be sustained through the remainder of the 250-year planning horizon.
Old Growth Site Index adjustments	OGSI adjustment equations, including SIBEC, were used for interior spruce and lodgepole pine to more accurately assess productivity of stands older than 140 years.	Long-term harvest gain of 22.6% for the main TSA and 8.1% for the 3 western supply blocks.
Reduced Time to Green-up	Green-up period for the IRM and visual constraint areas was reduced by 3 years to 13 and 12 years, respectively, to better reflect stand treatments such as brushing and fertilization that can reduce the time for stands to reach 3 m in height.	Not specifically reported but instead incorporated with other analysis options.
Reduced Regeneration Delay	Regeneration delay for all current and backlog NSR was reduced by 2 years and to 0 years.	Reducing regeneration delay for all current NSR improves the mid- and long-term gains by 2-5%.
Problem Forest Types	Inclusion of cedar-hemlock, balsam, wetbelt Douglas-fir, spruce and lodgepole pine PFTs, which are currently excluded from the forest land base due to low merchantability.	Only pine PFTs produced any significant effect to harvest levels. Three levels of utilization (100%, 50% and 25%) produced significant gains in both the Main TSA and 3 western supply blocks, most notably in the 3 western supply blocks where pine PFTs are predominant.
Genetically Improved Planting Stock	Tree improvement gains of 12% volume increase at rotation were used by adjusting site index with two candidate groups reviewed, lodgepole pine included and excluded.	Produces a long-term volume gain of 11.4% above base case.
Alternative Spacing Intensities	Double and triple the current estimated area juvenile spaced per year.	Long-term benefit of 1.2% - 3.5%.
Reducing Lost Productive Area from Future Roads	Reduction of lost productive area by 1% and 2% for future roads.	Long-term harvest increases of 1-2% for both the main TSA and 3 western supply blocks.
Fertilization and Spacing	Volume of all eligible lodgepole pine managed stands was increased by 15 m^3/ha at rotation to reflect gains from one fertilization treatment.	Long-term gain of 3.8% for the main TSA and no gain for the 3 western supply blocks.
Elimination of Backlog NSR	The base case scenario of 10 years to eliminate all backlog NSR (areas harvested before 1987) was reduced to 5 and 0 years.	Regenerating all backlog NSR in 5 years produces an 8% long-term gain for the main TSA and 2.5% mid-term gain for the 3 western supply blocks.
Commercial Thinning	One-pass volume recoveries of 50 m^3/ha and 70 m^3/ha for stands up to 20 years before the minimum harvest age were examined for the main TSA. This scenario improves adjacency constraints and available harvest at the minimum harvest age.	Improved timber availability in short- and mid-term by up to 43%.
Combination Scenarios	Combination scenarios were examined, such as reductions in regeneration delay combined with reduced green-up age and later commercial thinning.	Some treatment combinations can be additive, such as juvenile spacing and fertilization, but combination treatment results need further investigation.

Table 6. Effects of silviculture scenarios on timber supply by volume and percent increase (Inland Timber Management, 2000)

Silviculture Scenario	Volume Increase(m3/year)	% Increase
Plant with genetically improved stock	126,990	5.25
Rehabilitate repressed lodgepole pine	35,800	1.45
Reduce netdowns due to future roads	23,000	0.95
Reduce green-up timelines by five years	19,000	0.62
Fertilize to increase volume by $15m^3$/ha	8,800	0.33
Immediate elimination of backlog NSR	2,000	0.1
Eliminate backlog NSR within 5 years	< 2,000	< 0.1
Use alternate spacing densities	0	0

Table 7 provides all analysis results for the Williams Lake main TSA (excluding the three western supply blocks) and Table 8 covers similar analysis results specifically for the three western supply blocks.

Tables 9 and 10 are the treatment summary tables extracted from the Type 2 forest level analysis report (Inland Timber Management, 2000) for the main TSA and the three western supply blocks, respectively.

Table 7. All analysis results, Williams Lake main TSA (Timberline, 1999).

	SHORT TERM								MID TERM		LONG TERM	
	Decade1		Decade2		Decade3		Decade 4		Decades 5-9		Decade 10+	
Scenario	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case
Base Case	2670	n/a	2399	n/a	2155	n/a	1936	n/a	1861	n/a	1971	n/a
OGSI Adjustments	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	2416	22.6%
Reduced Time to Regenerate Backlog NSR	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	2011	2.0%
Reduced Regen Delay Reduced by 2 yrs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1891	1.6%	2011	2.0%
Reduced Regen Delay Reduced to 0	2670	0.0%	2399	0.0%	2155	0.0%	1946	0.5%	1946	4.6%	2066	4.8%
Utilization of Cedar PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	1971	0.0%
Utilization of 25 % of Balsam PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1886	1.3%	1986	0.8%
Utilization of 50 % of Balsam PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1901	2.1%	1986	0.8%
Utilization of 100 % of Balsam PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1946	0.5%	1946	4.6%	2001	1.5%
Utilization of 100% of Douglas fir PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	1971	0.0%
Utilization of 25 % of Spruce PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1871	0.5%	1976	0.3%
Utilization of 50 % of Spruce PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1876	0.8%	1981	0.5%
Utilization of 100 % of Spruce PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1891	1.6%	1986	0.8%
Utilization of 25 % of Lodgepole pine PFTs	2670	0.0%	2399	0.0%	2155	0.0%	1996	3.1%	1996	7.3%	1926	-2.3%
Utilization of 50 % of Lodgepole pine PFTs	2670	0.0%	2399	0.0%	2155	0.0%	2151	11.1%	2151	15.6%	1971	0.0%
Utilization of 100 % of Lodgepole pine PFTs	2670	0.0%	2451	2.2%	2451	13.7%	2451	26.6%	2451	31.7%	2011	2.0%
Alternative Spacing Intensities 6000 ha/yr	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	1996	1.3%
Alternative Spacing Intensities 12000 ha/yr	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	2011	2.0%
Alternative Spacing Intensities 18000 ha/yr	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	2041	3.6%
Commercial Thinning 50 m3/ha 1000 ha/yr + Reduced ages	2670	0.0%	2670	11.3%	2670	23.9%	2399	23.9%	1980	6.4%	1995 (14+)	1.2%
Commercial Thinning 50 m3/ha 2400 ha/yr + Reduced ages	2670	0.0%	2670	11.3%	2670	23.9%	2670	37.9%	2670	43.5%	1971 (14+)	0.0%
Commercial Thinning 70 m3/ha 1000 ha/yr + Reduced ages	2670	0.0%	2670	11.3%	2670	23.9%	2399	23.9%	1971	5.9%	1971 (14+)	0.0%
Commercial Thinning 70 m3/ha 2400 ha/yr + Reduced ages	2670	0.0%	2670	11.3%	2670	23.9%	2670	37.9%	2670	43.5%	1971 (12+)	0.0%
Commercial Thinning 70 m3/ha 1000 ha/yr + No regen delay	2670	0.0%	2670	11.3%	2670	23.9%	2399	23.9%	2066	11.0%	2066	4.8%
Road Reductions (reduced by 1%)	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	1996	1.3%
Road Reductions (reduced by 2%)	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1861	0.0%	2011	2.0%
Fertilization of Managed Stands	2670	0.0%	2399	0.0%	2155	0.0%	1936	0.0%	1866	0.3%	2046	3.8%
Reduction in Minimum Harvest Ages	2670	0.0%	2399	0.0%	2155	0.0%	1951	0.8%	1951	4.8%	2066	4.8%
Genetically Improved Stock	2670	0.0%	2399	0.0%	2155	0.0%	1951	0.8%	1951	4.8%	2195	11.4%

Table 8. All analysis results, three western supply blocks, Williams Lake TSA (Timberline, 1999)

	SHORT TERM								MID TERM		LONG TERM	
	Decade1		Decade2		Decade3		Decade 4		Decades 5-9		Decade 10+	
Scenario	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case	Harvest (000's m3/ha)	Change from base case
Base Case	425	n/a	381	n/a	341	n/a	315	n/a	315	n/a	297	n/a
OGSI Adjustments	425	0.0%	381	0.0%	341	0.0%	315	0.0%	315	0.0%	321	8.1%
Reduced Time to Regenerate Backlog NSR	425	0.0%	381	0.0%	341	0.0%	323	2.5%	323	2.5%	302	1.7%
Reduced Regen Delay Reduced by 2 yrs	425	0.0%	381	0.0%	341	0.0%	320	1.6%	320	1.6%	300	1.0%
Reduced Regen Delay Reduced to 0	425	0.0%	381	0.0%	341	0.0%	332	5.4%	332	5.4%	308	3.7%
Utilization of 25 % of Cedar PFTs	425	0.0%	381	0.0%	341	0.0%	317	0.6%	317	0.6%	299	0.7%
Utilization of 50 % of Cedar PFTs	425	0.0%	381	0.0%	341	0.0%	319	1.3%	319	1.3%	300	1.0%
Utilization of 100 % of Cedar PFTs	425	0.0%	381	0.0%	341	0.0%	323	2.5%	323	2.5%	303	2.0%
Utilization of 100 % of Balsam PFTs	425	0.0%	381	0.0%	341	0.0%	318	1.0%	318	1.0%	299	0.7%
Utilization of 25 % of Douglas fir PFTs	425	0.0%	381	0.0%	341	0.0%	317	0.6%	317	0.6%	298	0.3%
Utilization of 50 % of Douglas fir PFTs	425	0.0%	381	0.0%	341	0.0%	320	1.6%	320	1.6%	299	0.7%
Utilization of 100 % of Douglas fir FFTs	425	0.0%	381	0.0%	341	0.0%	325	3.2%	325	3.2%	303	2.0%
Utilization of 25 % of Spruce PFTs	425	0.0%	381	0.0%	341	0.0%	322	2.2%	322	2.2%	303	2.0%
Utilization of 50 % of Spruce PFTs	425	0.0%	381	0.0%	341	0.0%	328	4.1%	328	4.1%	304	2.4%
Utilization of 100 % of Spruce PFTs	425	0.0%	381	0.0%	342	0.2%	342	8.6%	342	8.6%	305	2.7%
Utilization of 25 % of Lodgepole pine PFTs	425	0.0%	428	12.3%	428	25.5%	428	35.9%	428	35.9%	321	8.1%
Utilization of 50 % of Lodgepole pine PFTs	540	27.1%	484	27.0%	434	27.3%	389	23.5%	367	16.5%	367	23.6%
Utilization of 100 % of Lodgepole pine PFTs	766	80.2%	687	80.3%	617	80.9%	554	75.9%	497	57.8%	452	52.2%
Spacing 100 % of Eligible stands	425	0.0%	381	0.0%	341	0.0%	315	0.0%	315	0.0%	298	0.3%
Road Reductions (reduced by 1%)	425	0.0%	381	0.0%	341	0.0%	315	0.0%	315	0.0%	300	1.0%
Road Reductions (reduced by 2%)	425	0.0%	381	0.0%	341	0.0%	315	0.0%	315	0.0%	301	1.3%

Table 9. Treatment summary table for the Williams Lake main TSA (Inland Timber Management, 2000)

MAIN TSA				Timber Supply Impacts		Impacts to Other Land Uses?					
Regime	Objective	Target Stand Description	Response Timeframe	Vol. Increase (000's m3\yr)	% Vol. In-crease	OG	Wild-life	Visuals	Estimated Treatment Area	Estimated Cost/ha	Estimated Jobs (person-days/ha)
OGSI Adjustment	Accurately define site productivity	Pli, Sx >140 ICH,ESSF, MS,SBS	Short - Mid Long	321	13.3	Y	N	N	n/a		
SIBEC Adjustment	Accurately define site productivity	All sites: assumed site series 1.	Short - Mid Long	641	26.5	Y	N	N	n/a		
Pli Rehabilitation	Increase THLB, increase site productivity	Repressed Pli SI <7	Mid - Long	35	1.45	N	N	N	10,000 ha (available area)*	1250	5
Fertilization	Increase site productivity, reduce rotation	Pli, SI >18	Mid - Long	8.8	0.33	N	N	Y	1200 ha/yr	295	1
Plant Genetically Improved Stock	Reduce rotation length, reduce green-up age	All planted sites 12% volume gain	Mid - Long	127	5.25				2000 ha/yr	40	n/a
Greenup Age Reduction	alleviate adjacency, reduce rotation	all managed stands, reduce by 5 yrs.	Short - Mid	19	0.62	Y	N	Y	n/a		n/a
Decrease Future Roads	Increase THLB		Short	23	0.95	N	N	N	reduce area by 2%		n/a
Backlog NSR	Alleviate adjacency, increase productivity	all backlog NSR sites	Mid- Long	2	0.10	N	N	N	1000 ha/yr	1000	1.5
Juvenile Spacing	Increase productivity, prep for CT/PC	% of AU as per Base Case 12-1800 sph	Mid - Long	0	0	N	N	N	6000 ha/yr	550	4.5
Partial Cutting/ Commercial Thin.	Alleviate adjacency, biodiversity issues and habitat supply	various	Short - Mid - Long	Not Tested	Not Tested	Y	Y	Y	further assessment required		2.5

Table 10. Treatment summary table for the Williams Lake TSA three western supply blocks (Inland Timber Management, 2000)

THREE WESTERN SUPPLY BLOCKS				Timber Supply Impacts		Impacts to Other Land Uses?					
Regime	**Objective**	**Target Stand Description**	**Response Timeframe**	**Vol. Increase (000's m3\yr)**	**% Vol In-crease**	**OG**	**Wild-life**	**Visuals**	**Estimated Treatment Area**	**Estimated Cost/ha**	**Estimated Jobs (person-days/ha)**
OGSI Adjustment	Accurately define site productivity	Pli, Sx >140 ICH,ESSF, MS,SBS	Short - Mid Long	170	31	Y	N	N	n/a		
SIBEC Adjustment	Accurately define Site productivity	All sites: assumed site series 1.	Short - Mid Long	309	56	Y	N	N	n/a		
Pli Rehab	Increase THLB, increase site productivity	Repressed Pli SI <7	Mid - Long	137	2.5	N	N	N	20,000 (available area)*	1250	5
Greenup Age Reduction	alleviate adjacency, reduce rotation	all managed stands, reduce by 5 yrs	Short - Mid	3	0.55	Y	N	Y	n/a	n/a	n/a
Decrease Future Roads	Increase THLB		Short	7.2	1.3	N	N	N	n/a	n/a	n/a
Juvenile Spacing	Increase productivity,	% of AU, as per base case, target 1200 - 1800 sph.	Mid-Long	0	0	N	N	N	2000 (available area)*	600	4.5

* Although this area is silviculturally suitable for treatment, economic feasibility to complete this level of treatment in the three western supply blocks may be limited.

2.4.4 Opportunities to Increase Timber Quality

Pruning is well documented as a treatment to improve timber quality (BC Ministry of Forests, date unknown; Barber, 1997). Other technical sources include the Technical Background Information, Timber Enhancement Strategy report, prepared by the Cariboo Lumber Manufacturers' Association (1997), which summarizes technical information on silviculture treatment benefits. The report lists pruning of young stands as a means to improve stem quality and log value at harvest. Stands most eligible for pruning have a high site index, developed access and close proximity to manufacturing facilities.

Operational pruning in the Williams Lake TSA to date, however, has raised concerns due to questionable cost-effectiveness and measured decreases in height growth when live branches are pruned. Consequently, pruning is expected to remain a low priority treatment for the TSA for some time.

2.4.5 Williams Lake TSA Sustainable Harvest Data

2.4.5.1 Enhanced Forestry Table

Williams Lake TSA Summary
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2001/02**	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	6556	5101	4601	4116	4116	29.04	190400
Spacing	2100	2354	2590	2615	2857	493.57	1036500
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Other - Incremental Planting	250	250	250	250	250	564.62	141159
Totals hectares	8906	7705	7441	6981	7223	153.61	1,368,059
Planning and prescriptions							55000
Total dollars							1,423,059
Forest Health Enhancement							
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Habitat Supply and Biodiversity Enhancement							
Treatments	70	50	50	50	50	1,071.29	75000
Domestic Range							
Treatments	0	0	0	0	0	0.00	0
Enhanced Forestry Activities - Management Unit Total							
Surveys	6556	5101	4601	4116	4116	29.04	190,400
Spacing	2100	2354	2590	2615	2857	493.57	1,036,500
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Incr. Plant & Habitat Enh.	320	300	300	300	300	675.41	216159
Totals hectares	8976	7455	7191	6731	6973	160.77	1,443,059
Planning and prescriptions							55,000
Studies funding SIA, Root Rot and CT Opport. Meth. Study							282465
Total dollars							1,780,524

2.4.5.2 Backlog Program Table

Williams Lake TSA Summary
Backlog Program Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Legal Obligations							
Surveys	9000	2250	1300	700	700	24.44	220000
Site preparation	40	20	5	0	0	499.88	20000
Planting	150	40	5	0	0	627.97	94200
Brushing	350	65	55	55	55	441.42	154500
Max. density spacing	225	125	125	125	125	522.20	117500
Totals hectares	9765	2500	1490	880	880	62.08	606,200
Seed purchase	80000	40000	5000	0	0	0.25	20000
Total legal obligations							626,200
Backlog Reforestation							
Surveys	7967	5677	4627	4027	4027	25.53	203400
Site preparation	40	20	5	0	0	499.88	20000
Planting	421	450	380	150	150	934.51	393433
Brushing	1824	1050	807	807	807	503.84	919000
Totals hectares	10252	7197	5819	4984	4984	149.81	1,535,833
Seed purchase	322500	80000	85000	80000	80000	0.32	104767
Prescriptions and planning dollars							40000
Total backlog reforestation							1,680,600
Impeded areas							
Surveys	2400	2215	2415	2800	3000	29.58	71000
Brushing	570	550	550	650	700	555.25	316500
Density spacing	100	100	100	100	0	599.93	60000
Totals hectares	3070	2865	3065	3550	3700	145.76	447,500
Prescriptions and planning dollars							31500
Total impeded areas							479,000
Site Restoration							
Fill planting	50	50	50	50	50	399.90	20000
Rehabilitation	110	160	110	110	110	881.74	97000
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	160	210	160	160	160	731.09	117,000
Seed purchase	40000	40000	40000	40000	40000	0.40	16000
Prescriptions and planning dollars							30000
Total site restoration							163,000
Backlog Program Activities - Management Unit Total							
Surveys	19367	10142	8342	7527	7727	25.53	494400
Site preparation	190	200	120	110	110	720.94	137000
Planting	621	540	435	200	200	817.39	507633
Brushing	2744	1665	1412	1512	1562	506.56	1390000
Density spacing	325	225	225	225	125	546.12	177500
Totals hectares	23247	12772	10534	9574	9724	116.42	2706533
Seed purchase	442500	160000	130000	120000	120000	0.32	140767
Prescriptions and planning							101,500
Recommended studies							0
Total backlog program							2,948,800

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.4.5.3 Performance Measures Based on Activities Planned for 2001/2002

Williams Lake TSA Summary

Performance Measures Based on Activities Planned for 2001/2002

Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	621	0	8,555	190	621	2,744	2,425	0	0	15,476	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	1	0.25	0	0.33		
1.2	Years the factor will apply	80	80	70	80	80	75	65	60	60		
1.3	Pot. total merch. volume increment in 65 years (m3)	16,892	0	149,705	0	94,398	205,802	39,407	0	0		506,204
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			1,380								1,380
1.5	Est. area that will be declared as free growing (ha)			1,860								1,860
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	62	0	855	181	1,242	7,162	9,603	0	0	1,548	
3.3	Estimated total full time equivalent positions (FTE)	0	0	5	1	7	40	53	0	0	9	115
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											70
5.3	Est. area with secondary value provided to biodiversity (ha)											20

2.4.5.4 Studies Table

See section 2.8 Cariboo Region Special Studies Summary

2.4.5.5 Williams Lake TSA Summary Table

Williams Lake TSA Summary
Management Unit Summary Table
For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	8,976	7,455	7,191	6,731	6,973	161	1,443,059
Planning, prescriptions and seedlings							337,465
Backlog Program Field Activities	23,247	0	0	0	0	116	2,706,533
Planning, prescriptions and seedlings							242,267
Totals	32,223	7,455	7,191	6,731	6,973		4,729,324

Performance Measures

Potential total merchentable volume increment in 65 years	506,204 m^3
Estimated ha that will be reclassified as stocked	1,380 ha
Estimated ha that will be declared as free growing	1,860 ha
Estimated total full time equivalent positions generated	115 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat creation	70 ha
Estimated area with secondary value provided to biodiversity	20 ha

2.5 100 Mile House TSA Sustainable Harvest Outline

2.5.1 Basic Data

The 100 Mile House Timber Supply Area is the most southern of the three TSAs in the Cariboo Forest Region, located in the central interior of British Columbia. The area occupies a section of the Fraser Basin and Interior Plateau between the Fraser River and Quesnel Highland to the east (BC Ministry of Forests, no date). The TSA's climate is dry and cold in the west due to the rainshadow influence of the Coast Mountains, and milder and wetter where airflow rises to the east, with a very dry and warm Fraser River valley bisecting the TSA. Extensive grassland and wetland areas and rolling topography are other key features of the area.

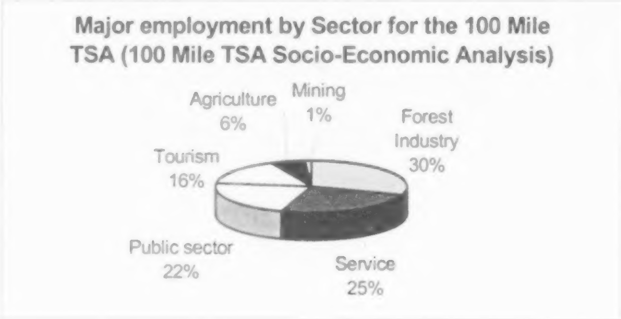

Figure 5. Major employment by sector for the 100 Mile House TSA.

The predominant community in the 100 Mile House Timber Supply Area is the regional municipality of 100 Mile House, with the village of Clinton located in the south end of the TSA. The TSA extends east and west of these central communities located on Highway 97. Wells-Gray Provincial Park forms the TSA's eastern boundary; the western boundary is the Fraser River. There are two First Nations Bands and one association which reside primarily in the TSA, the Canim Lake and High Bar Bands. Another eight bands have territorial claims to the area. The TSA covers 1.2 million ha with approximately 77% as productive Crown forest (BC Ministry of Forests, date unknown). Deductions to the productive forest landbase reduce the current harvesting landbase to 718,429 ha, or 59% of the total landbase.

Figure 5 provides a summary of major employment by sector, and Figure 6 shows the age class distribution for the 100 Mile House TSA.

The allowable annual cut has been affected for the last 20 years by outbreaks of mountain pine beetle and the need for beetle control and salvage harvesting. The current AAC of 1,237,000 m^3, set on January 1, 1994, is comprised of four components:

- TSA clearcut
- Drybelt Douglas-fir selection harvesting
- Mule Deer Winter Range (MDWR) selection harvesting
- Pulpwood Agreement #16 (PA16)

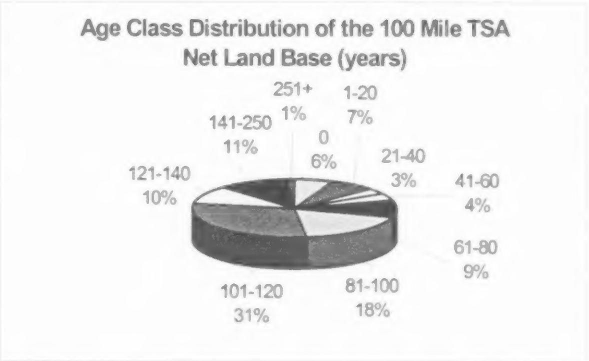

Figure 6. Age class distribution of the 100 Mile House TSA.

The second Timber Supply Review (TSR2) is in the process of being compiled in the 100 Mile District, but it is not yet ready for public review.

The harvest schedule used by Timberline (1998b) for the Stand Treatments Analysis initially examined various timber harvest flow alternatives. An "even flow" schedule was selected to provide the optimal supply of timber over the long term. The total annual harvest levels incorporate an even flow clearcut portion of 1,291,000 m^3 and a Pulpwood Agreement 16 cut of 112,000 m^3 annually for the entire 250-year planning horizon. The fluctuating contribution of selection harvest from drybelt Douglas-fir and mule deer winter ranges contributes to a projected total annual harvest of approximately 1.6 million m^3.

2.5.2 Issues

Table 11 lists 15 issues affecting timber supply from the perspectives of timber quality and quantity, forest health and habitat supply. They are summarized from the TSR1 AAC rationale (Pedersen, 1996c) and TSR2 data package for the 100 Mile TSA, with additional input from MELP staff.

Table 11. Sustainable harvest issues for the 100 Mile House TSA

Issue	Comments
Cariboo-Chilcotin Land Use Plan	The CCLUP was announced by government in October, 1994 and adopted by Cabinet as a Higher Level Plan with later amendment effective July 31, 1999. Management prescriptions contained in the CCLUP strategy reports have been modified by the Integration Report and are considered key information sources in Forest Development Plan direction. The TSR2 process relies on CCLUP information for the modeling of some prescriptions or constraints, which will affect long-term timber supply considerations in the RMP.
Landscape-level biodiversity	Seral stage distribution targets recommended in the *Biodiversity Conservation Strategy* will be used for achieving biodiversity objectives outlined in the CCLUP.
Stand-level biodiversity	Wildlife tree patches are planned to reduce impact on the productive forest area as much as possible.
Pulpwood Agreement #16 timber supply	112,000m^3/year was partitioned in TSR1 for PA #16. These forest types will be segregated for TSR2.
Salvage harvesting for mountain pine beetle and winter 1998/99 ice damage.	New criteria for stands damaged or killed by mountain pine beetle are in use to address biodiversity objectives. Recent increases in salvage requirements, however, may affect short-term harvest levels and longer-term timber supply.
Inventory audit	Updated inventory needed (Vegetation Resources Inventory)
Old Growth Site Index	Current research shows that site indices for stands older than 140 years are below actual productivity. Until regional information is available, the provincial site index adjustments will be applied as a sensitivity analysis in TSR2.
Lignum Innovative Forest Practices Agreement	The IFPA gives Lignum the opportunity to test innovative forestry practices for increasing AAC and implementing successful practices in the TSA.
Goal 2 protected area candidates	Included in TSR2.
Sub-Regional Planning	SRP will refine CCLUP constraints in the TSA, including visually sensitive areas, tourism visuals, wildlife habitat areas, back country recreation and access criteria
Visually sensitive areas	Partial retention was used as the Visual Quality Objective in TSR1, but anticipated tourism pressures may find this to have overestimated the timber supply, particularly in the eastern portion of the TSA.
Wildlife habitat	Mule deer winter range strategy for harvesting in the IDF allows for no harvesting on some ranges with limited selection harvesting and extended rotations on others. Grizzly bear, moose, furbearer, species at risk – implementation strategies for CCLUP requirements to manage for habitat for these species are being developed on an ongoing basis; for enhanced forestry activities, standards for maintaining habitat supply will include considerations for these species.

Issue	Comments
Riparian habitat	The inclusion of riparian reserves and management zones reduces the productive forest land area with potential impact on the availability of mature volume for harvesting.
Green-up	Under discussion and will be refined. Patch size is a related issue.
Community dependence	As shown on page 1 under Basic Data, approximately 1/3rd of total employment in the TSA relies on the forest industry. Public input is most prominent on this socio-economic issue. Future Timber Supply Reviews and AAC determinations will need to balance timber availability with community dependence and opportunities for mitigating projected falldowns with development of alternate economic bases.

2.5.3 Opportunities to Increase Timber Supply

The Stand Treatments Analysis report for the 100 Mile House TSA (Timberline, 1998b) outlines the methodology used in the timber supply analysis. FSSIM 3.0, a forest-level simulation model, predicted the development of a forest over a 250-year planning horizon based on initial forest conditions, expected patterns of growth, harvesting and regeneration rules, and assumptions for non-timber resources. A list of the analysis options with a brief description of each and its effect on timber supply follows in Table 12 to demonstrate the breadth of scenarios tested and examined.

Table 12. Summary of stand treatment analysis options and their effect on timber supply in the 100 Mile House TSA (Timberline, 1998b)

Analysis Option	Description	Effect on Timber Supply
Base Case	The management assumptions, land base netdowns, general growth and yield parameters and forest cover requirements from TSR1 were used, with some minor changes to the development of analysis units to better reflect anticipated TSR2.	The base case even-flow harvest rate of 1,291,000 for the TSA clearcut is 3% above the current AAC of 1,250,000 m^3/year. The TSA clearcut and PA16 harvest levels are stable over time. Some fluctuations exist in selection harvest levels due to the current age class distribution for forests on those areas and the history of past harvesting. The average annual harvest from the TSA component (clearcut, Fdi-selection & MDWR selection) is 1,443,100 m^3/year (net of Non Recoverable Losses) which is 15% higher than the current AAC.
Old Growth Site Index adjustments	OGSI adjustment equations, including SIBEC, were used for interior spruce and lodgepole pine to more accurately assess productivity of stands older than 140 years.	The maximum gain is slightly less than 5% over base case. PA16 and selection areas were not adjusted. The OGSI adjustment on Managed Stand Yield Tables reduces the impact of the critical period 130-150 years into the future because there is more merchantable volume at that time.
Reduced Time to Green-up	Green-up period for the IRM and visual constraint areas was reduced by 3 years, to better reflect stand treatments such as brushing and fertilization that can reduce the time for stands to reach 3 m in height.	The increase over the Base Case + OGSI harvest rate in this scenario is negligible.
Reduced Regeneration Delay	The expected time for stands to become established was reduced by two years.	Decreasing regeneration delay by two years results in an increase in the annual harvest rate of approximately 2%.

Analysis Option	Description	Effect on Timber Supply
Genetically Improved Planting Stock	Tree improvement gains of 12% volume increase at rotation were used by adjusting site index with two candidate groups reviewed, lodgepole pine included and excluded.	Inclusion of pine increases periodic harvest by 12%. However, results may be too optimistic because of the assumption that all future pine stands will be regenerated by planting, compared with only 10% in base case. If genetic gains are applied only to Douglas–fir and spruce stands, the gain is 3%.
Alternative Spacing Densities	Pine and spruce densities were increased to 3600 and Douglas-fir to 3000 stems/hectare. Pine and spruce were decreased to 1200 and Douglas-fir to 1000 stems/ha.	Increased densities reduce harvest rate by 1%. Decreased densities reduce harvest rate by 3%.
Fertilization and Spacing	Volume of all eligible lodgepole pine managed stands was increased by 15 m^3/ha at rotation to reflect gains from one fertilization treatment.	Impact of fertilizing only good site pine is minimal, <0.5%. Fertilizing good and medium site pine increases annual harvest rate by 3%, and the average gain in volume by 5% over Base Case + OGSI scenario.

The majority of annual harvest adjustments related to the various treatments were associated with the TSA clearcut portion of the landbase.

2.5.4 Opportunities to Increase Timber Quality

Pruning is well documented as a treatment to improve timber quality (BC Ministry of Forests, date unknown; Barber, 1997). Other technical sources include the Technical Background Information, Timber Enhancement Strategy report, prepared by the Cariboo Lumber Manufacturers' Association (1997), which summarizes technical information on silviculture treatment benefits. The report lists pruning of young stands as a means to improve stem quality and log value at harvest. Stands most eligible for pruning have a high site index, developed access and close proximity to manufacturing facilities.

Growth rates expected in various ecosystems within the 100 Mile TSA indicate that pruning is only viable in the more productive subzones. Operational pruning in the 100 Mile House TSA has not been conducted to date. Pruning is expected to remain a low priority treatment in the TSA for some time.

2.5.5 100 Mile House TSA Sustainable Harvest Data

2.5.5.1 Enhanced Forestry Table

100 Mile House TSA Summary
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	600	600	600	600	600	30.00	18000
Spacing	608	615	615	615	615	485.20	295000
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Other	50	50	50	50	50	399.98	20,000
Totals hectares	1258	1265	1265	1265	1265	264.70	333,000
Planning and prescriptions							47,000
Total dollars							380,000

Forest Health Enhancement

Spacing	145	145	145	145	145	482.76	70000
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	145	145	145	145	145	482.74	70,000

Habitat Supply and Biodiversity Enhancement

Treatments	50	50	50	50	50	499.98	25000

Domestic Range

Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

Surveys	600	600	600	600	600	30.00	18,000
Spacing	753	760	760	760	760	484.73	365,000
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Other stand tending activities	100	100	100	100	100	449.97	45000
Totals hectares	1453	1360	1360	1360	1360	294.56	428,000
Planning and prescriptions							47,000
Studies funding							128603
Total dollars							603,603

2.5.5.2 Backlog Program Table

100 Mile House TSA Summary
Backlog Program Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	4162	3119	2554	2194	2091	30.00	124860
Site preparation	10	10	30	50	50	499.90	5000
Planting	97	70	70	140	190	516.55	49950
Brushing	684	664	500	500	500	616.83	421730
Max. density spacing	85	50	50	50	50	479.40	40750
Totals hectares	5037	3913	3204	2934	2881	127.51	642,290
Seed purchase	83000	93000	93000	188000	258000	0.19	16000
Total legal obligations							658,290
Backlog Reforestation							
Surveys	10272	8852	8775	9348	9245	30.24	310660
Site preparation	171	96	136	80	80	358.14	61350
Planting	355	292	211	215	215	505.52	179510
Brushing	782	786	545	477	455	430.30	336367
Totals hectares	11580	10026	9667	10120	9995	76.67	887,887
Seed purchase	276100	517800	180000	275000	275000	0.20	54,100
Prescriptions and planning dollars							94,000
Total backlog reforestation							1,035,987
Impeded areas							
Surveys	5346	5654	4790	3405	1386	30.00	160380
Brushing	1159	1157	272	340	97	403.97	468000
Density spacing	3147	2386	801	0	0	451.71	1421300
Totals hectares	9651	9197	5864	3745	1483	212.38	2,049,680
Prescriptions and planning dollars							405,000
Total impeded areas							2,454,680
Site Restoration							
Fill planting	0	0	0	100	100	0.00	0
Rehabilitation	0	0	0	0	0	0.00	0
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	100	100	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total site restoration							0
Backlog Program Activities - Management Unit Total							
Surveys	19780	17625	16119	14947	12722	30.13	595900
Site preparation	181	106	166	130	130	365.95	66350
Planting	452	362	281	455	505	507.87	229460
Brushing	2624	2607	1318	1317	1052	467.28	1226097
Density spacing	3232	2436	851	50	50	452.44	1462050
Totals hectares	26268	23135	18734	16899	14459	136.28	3579857
Seed purchase	359100	610800	273000	463000	533000	0.20	70100
Prescriptions and planning							499,000
Recommended studies							0
Total backlog program							4,148,957

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.5.5.3 Performance Measures Based on Activities Planned for 2001/2002

100 Mile House TSA Summary

Performance Measures Based on Activities Planned for 2001/2002

Based on Type 2 silviculture strategy

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	452	0	6,725	181	452	2,624	3,985	0	0	14,519	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	1	0	0	0.33		
1.2	Years the factor will apply	80	80	70	80	80	75	65	60	60		
1.3	Pot. total merch. volume increment in 65 years (m3)	12,289	0	117,693	0	68,675	196,793	0	0	0		395,450
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			935								935
1.5	Est. area that will be declared as free growing (ha)			6,100								6,100
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	3.25	2.5	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	45	0	673	172	904	8,528	9,961	0	0	1,452	
3.3	Estimated total full time equivalent positions (FTE)	0	0	4	1	5	47	55	0	0	8	121
4.1	**Forest Health Enhancement (ha)**											145
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											0

2.5.5.4 Studies Table

See section 2.8 Cariboo Region Special Studies Summary

2.5.5.5 100 Mile House TSA Summary Table

100 Mile House TSA Summary
Management Unit Summary Table
For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,453	1,360	1,360	1,360	1,360	295	428,000
Planning, prescriptions and seedlings							175,603
Backlog Program Field Activities	26,268	0	0	0	0	136	3,579,857
Planning, prescriptions and seedlings							569,100
Totals	27,721	1,360	1,360	1,360	1,360		4,752,560

Performance Measures

Potential total merchentable volume increment in 65 years	395,450 m^3
Estimated ha that will be reclassified as stocked	935 ha
Estimated ha that will be declared as free growing	6,100 ha
Estimated total full time equivalent positions generated	121 FTEs
Forest health enhancement area	145 ha
Planned area for specific wildlife forage or habitat creation	50 ha
Estimated area with secondary value provided to biodiversity	0 ha

2.6 TFL 5 Sustainable Harvest Outline[1]

2.6.1 Basic Data

TFL 5 is located at the north end of the Quesnel Forest District. Weldwood of Canada Ltd. carries out forestry operations and general management of TFL 5. This tree farm was first awarded in 1951 to Western Plywood Ltd., the predecessor of Weldwood of Canada Ltd. Since 1951, nine Management and Working Plans have guided resource development activities on TFL 5. Programs undertaken since 1985 that have influenced resource management activities include:

- Forest cover inventory
- Fish, Forest and Wildlife Plan
- Biogeoclimatic Ecosystem Mapping
- Creation of Managed Stand Yield Tables specific for TFL 5
- A 10-Year incremental silviculture program (completed in 1995)
- Analysis into the effects of white pine weevil (ongoing)

2.6.2 Issues

2.6.2.1 Timber Issues

Silviculture activities are expected to play an important role in the future timber supply of the TFL. Perhaps, just as importantly, these activities will also have a significant effect on timber quality.

Weldwood's AAC apportionments within the Quesnel TSA are currently secured through long-term tenure with TFL 5 and replaceable Forest Licenses in the Quesnel and Prince George Forest Districts. These tenures comprise a total annual volume of approximately 611,000 m^3/year. Since this is only 67% of the total volume that the plywood mill and the sawmill can utilize under full operating capacity, the shortfall must therefore be addressed through private wood purchases.

Premium sawlogs are of very high demand in Weldwood's manufacturing facilities. These facilities have a throughput requirement requiring that approximately 50-55% of the logs processed be of premium sawlog/peeler grades. To offset the shortfall in quality that currently exists, aggressive log trades are made with other Quesnel and Prince George licensees. Also, as the combined AACs are unable to meet the operating capacity of the two plants, private purchases of as much as 400,000 m^3 are made annually. Weldwood recognizes that current basic silviculture practices and reduced rotation ages will have a negative affect on premium sawlog supplies. Weldwood also recognizes that the high quality growing sites occurring within TFL 5 would be well suited to silviculture regimes geared to produce premium grade sawlogs.

As a result of these quality and quantity issues, silviculture activities are very important in overall strategic management considerations. Within the next 30 to 50 years, an increasing percentage of previously harvested area will be providing second growth forests to support the allowable annual cut. It is forecast that by the year 2050, 60% of the harvest will come from second growth managed stands. The condition of these stands, both on a volume level and on a quality basis, will play a critical role in the future opportunities that are available to Weldwood.

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[1] Extracted from Industrial Forestry Service, 2000.

2.6.2.2 *Habitat Issues*

Approximately 70% of TFL 5 is found within the Lower Blackwater Special Resource Development Zone (SRDZ), as identified in CCLUP. The CCLUP has identified this area as having high wildlife values, for mule deer winter range, in particular. The mule deer winter range issues were largely resolved in 1995 with a Fish, Forest and Wildlife Management Plan completed for TFL 5 by Keystone Wildlife Research. Management constraints designed to regulate mule deer habitat were incorporated into the 1997 Timber Supply Analysis for TFL 5.

Discussions relating to various incremental silviculture activities that may be pursued on TFL 5 in the future were not a concern as a habitat issue. Most of these activities would likely lend themselves to an increased diversity of habitat throughout TFL 5.

2.6.2.3 *Employment Issues*

Within the Quesnel Forest District, TFL 5 contributes only a very small part of the total harvest (approximately 5%). TFL 5's current AAC supports approximately 15% of the workers employed in the Weldwood sawmill and plywood mill in Quesnel. There are no major issues regarding employment other than the general goal of not reducing the current AAC. The timber supply analysis showed that a reduction in the future AAC is unlikely given current management assumptions.

2.6.3 Opportunities to Increase Timber Supply

Opportunities to increase timber supply for TFL 5 are shown in Table 13.

Table 13. Potential strategies by timeframe for TFL 5 (Industrial Forestry Service, 2000)

Response Timeframe	Objective/Action	Anticipated Result
Short Term	1. OAF survey 2. Ensure future managed stand voids are at a maximum of 10% (ie OAF1)	1. If the survey identifies that the OAF 1 of 15% for the TFL overestimates the forecast losses to openings in managed stands, the managed stands which will be harvested in 50-60 years will experience in increase in yield of as much as 5-10% 2 ±1 % on managed stand curves
Mid Term	1. OAF survey 2 Utilize better genetic gain information 3. Reduce harvest age 4. Remove OG constraint in IRM zone 5. Commercial Thinning 6. Purchase private land to fill hole in age class profile in 50 years	1 ±5 % on managed stand curves 2. ±5% on managed stand curves 3. +5% short/mid term impact (negative effect [-7%] in the long term due to harvesting at below culmination age) 4. estimated + 1% increase 5. estimated +2% as a result of a shift in the scheduling of available volume 6. Area multiplied by an MAI of 4 would provide a thumb-nail impact. Weldwood began this strategy in mid 1990s.
Long Term	1. Reduce regeneration delay to 0 yrs. 2. Space/fertilize future managed stands. 3. Remove OG constraint in IRM zone.	1. + 2.7% increase 2. + 4% 3. + 1%

2.6.4 Opportunities to Increase Timber Quality

The following five strategies are identified in the Type 1 strategy (Industrial Forestry Service, 2000) as most appropriate for implementation on TFL 5 to improve timber quality. Generally, improved timber quality aims to grow premium sawlogs of peeler quality, large-diameter Douglas-fir, with little rot and few tight knots.

1. Increase the proportion of Douglas-fir on the TFL to 50% by volume, by planting and giving preference to Douglas-fir in any spacing or conifer release treatments.

2. Utilize spacing to:
   - Reduce immature stand densities to optimize both site occupancy and growth per tree to achieve a target diameter at culmination of >35 cm for approximately 50-60% of the stand volume.
   - Set immature stand and plantation densities at levels suitable for pruning so that pruning costs are not prohibitive, and to allow crop tree selection for pruning.
   - Reduce conifer densities and select crop trees accordingly during conifer release treatments such that target diameters can be achieved at rotation and or "set up" for pruning if required.

3. Utilize pruning to:
   - Minimize the frequency of knots in, at least, the bottom two logs of each stem (>5.5 m), in spaced stands.
   - Maintain the juvenile wood core in the bottom two logs to 9 cm or less in spaced stands

4. Use late rotation fertilization to increase the production of mature wood approximately 10 years before harvest (clear or near clear wood). This should be used in combination with a commercial thin or in other mature or near mature stands with appropriate densities.

5. Commercial thin appropriate mature or near mature stands to increase the average diameter of the remaining crop trees and the proportion of premium sawlogs in the residual stand. This should be done on an experimental basis to identify economic factors and stand attributes that will make this treatment successful.

2.6.5 TFL 5 Sustainable Harvest Data

2.6.5.1 Enhanced Forestry Table

TFL 5
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	500	500	500	500	500	28.00	14000
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	450	400	400	200	200	333.33	150000
Other	0	0	0	0	0	0.00	0
Totals hectares	950	900	900	700	700	172.63	164,000
Planning and prescriptions							10,000
Total dollars							174,000

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Habitat Supply and Biodiversity Enhancement

Treatments	0	0	0	0	0	0.00	0

Domestic Range

Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

Surveys	500	500	500	500	500	28.00	14,000
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	450	400	400	200	200	333.33	150,000
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	950	900	900	700	700	172.63	164,000
Planning and prescriptions							10,000
Studies funding							0
Total dollars							174,000

2.6.5.2 Backlog Program Table

TFL 5

Backlog Program Table

For the 2001/02 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2001/02**	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	0	0	0	0	0	0.00	0
Site preparation	50	50	0	0	0	0.00	45000
Planting	0	80	80	0	0	0.00	0
Brushing	0	0	0	80	80	0.00	0
Max. density spacing	0	0	0	0	0	0.00	0
Totals hectares	50	130	80	80	80	899.95	45,000
Seed purchase	0	0	0	0	0	0.00	0
Total legal obligations							45,000
Backlog Reforestation							
Surveys	2500	1800	500	0	0	28.00	70000
Site preparation	0	0	0	0	0	0.00	0
Planting	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Totals hectares	2500	1800	500	0	0	28.00	70,000
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							5,000
Total backlog reforestation							75,000
Impeded areas							
Surveys	0	0	0	0	0	0.00	0
Brushing	200	200	200	200	200	650.00	130000
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	200	200	200	200	200	649.99	130,000
Prescriptions and planning dollars							10,000
Total impeded areas							140,000
Site Restoration							
Fill planting	0	0	0	0	0	0.00	0
Rehabilitation	0	0	0	0	0	0.00	0
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total site restoration							0
Backlog Program Activities - Management Unit Total							
Surveys	2500	1800	500	0	0	28.00	70000
Site preparation	50	50	0	0	0	899.96	45000
Planting	0	80	80	0	0	0.00	0
Brushing	200	200	200	280	280	650.00	130000
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	2750	2130	780	280	280	89.09	245000
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning							15,000
Recommended studies							0
Total backlog program							260,000

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.6.5.3 Performance Measures Based on Activities Planned for 2001/2002

TFL
5
Performance Measures Based on Activities Planned for 2001/2002

Based on Type 1 silviculture strategy

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	0	0	990	50	0	200	0	0	450	1,690	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	0.25	0	0	0.40		
1.2	Years the factor will apply	65	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	16,088	0	0	3,250	0	0	11,700		31,038
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			200								200
1.5	Est. area that will be declared as free growing (ha)			250								250
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	99	48	0	522	0	0	81	169	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	3	0	0	0	1	5
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

2.6.5.4 Studies Table

See section 2.8 Cariboo Region Special Studies Summary

2.6.5.5 TFL 5 TSA Summary Table

TFL 5

Management Unit Summary Table

For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	950	900	900	700	700	173	164,000
Planning, prescriptions and seedlings							10,000
Backlog Program Field Activities	2,750	0	0	0	0	89	245,000
Planning, prescriptions and seedlings							15,000
Totals	3,700	900	900	700	700		434,000

Performance Measures

Potential total merchentable volume increment in 65 years	31,038 m^3
Estimated ha that will be reclassified as stocked	200 ha
Estimated ha that will be declared as free growing	250 ha
Estimated total full time equivalent positions generated	5 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat creation	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

2.7 TFL 52 Sustainable Harvest Outline

2.7.1 Basic Data

TFL 52 is located east of the community of Quesnel, in the eastern half of the Quesnel Forest District. The licensee is West Fraser Mills Ltd.

2.7.2 Issues

No information on issues within the TFL have been provided to date. The TFL will be under going a Type 2 Strategic Silviculture analysis this fiscal year.

2.7.3 Opportunities to Increase Timber Supply

2.7.4 Opportunities to Increase Timber Quality

2.7.5 TFL 52 Sustainable Harvest Data

2.7.5.1 Enhanced Forestry Table

TFL 52
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	750	750	750	750	750	20.00	15000
Spacing	0	25	25	25	25	0.00	0
Pruning	0	15	15	15	15	0.00	0
Fertilizing	0	0	0	30	0	0.00	0
Other	0	0	0	0	0	0.00	0
Totals hectares	750	790	790	820	790	20.00	15,000
Planning and prescriptions	100	100	100	100	100		2,000
Total dollars							17,000
Forest Health Enhancement							
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Habitat Supply and Biodiversity Enhancement							
Treatments	0	0	0	0	0	0.00	0
Domestic Range							
Treatments	0	0	0	0	0	0.00	0
Enhanced Forestry Activities - Management Unit Total							
Surveys	750	750	750	750	750	20.00	15,000
Spacing	0	25	25	25	25	0.00	0
Pruning	0	15	15	15	15	0.00	0
Fertilizing	0	0	0	30	0	0.00	0
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	750	790	790	820	790	20.00	15,000
Planning and prescriptions							2,000
Studies funding							0
Total dollars							17,000

2.7.5.2 Backlog Program Table

TFL 52

Backlog Program Table

For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	0	0	0	0	0	0.00	0
Site preparation	0	0	0	0	0	0.00	0
Planting	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Max. density spacing	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Total legal obligations							0
Backlog Reforestation							
Surveys	4000	4000	3150	3150	2700	28.13	112500
Site preparation	225	125	100	60	50	583.33	131250
Planting	275	175	125	100	60	700.00	192500
Brushing	250	180	180	160	160	376.00	94000
Totals hectares	4750	4480	3555	3470	2970	111.63	530,250
Seed purchase	15000	10000	8000	8000	6000	0.00	0
Prescriptions and planning dollars							20,000
Total backlog reforestation							550,250
Impeded areas							
Surveys	500	500	350	350	300	25.00	12500
Brushing	100	75	75	75	75	375.00	37500
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	600	575	425	425	375	83.33	50,000
Prescriptions and planning dollars							0
Total impeded areas							50,000
Site Restoration							
Fill planting	0	0	0	0	0	0.00	0
Rehabilitation	0	0	0	0	0	0.00	0
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total site restoration							0
Backlog Program Activities - Management Unit Total							
Surveys	4500	4500	3500	3500	3000	27.78	125000
Site preparation	225	150	100	60	50	583.33	131250
Planting	275	175	125	100	60	699.99	192500
Brushing	350	255	255	235	235	375.71	131500
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	5350	5080	3980	3895	3345	108.46	580250
Seed purchase	15000	10000	8000	8000	6000	0.00	0
Prescriptions and planning							20,000
Recommended studies							0
Total backlog program							600,250

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.7.5.3 Performance Measures Based on Activities Planned for 2001/2002

TFL
52
Performance Measures Based on Activities Planned for 2001/2002

Based on Type 1 TFL Mgmt Plan

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	275	0	1,733	225	275	350	0	0	0	2,858	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	0.25	0	0	0.40		
1.2	Years the factor will apply	65	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	6,078	0	28,153	0	33,963	5,688	0	0	0		73,881
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			475								475
1.5	Est. area that will be declared as free growing (ha)			200								200
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	28	0	173	214	550	914	0	0	0	286	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	1	3	5	0	0	0	2	12
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

2.7.5.4 Studies Table

See section 2.8 Cariboo Region Special Studies Summary

2.7.5.5 TFL 52 Summary Table

TFL 52

Management Unit Summary Table

For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	750	790	790	820	790	20	15,000
Planning, prescriptions and seedlings							2,000
Backlog Program Field Activities	5,350	0	0	0	0	108	580,250
Planning, prescriptions and seedlings							20,000
Totals	6,100	790	790	820	790		617,250

Performance Measures

Potential total merchantable volume increment in 65 years	73,881 m^3
Estimated ha that will be reclassified as stocked	475 ha
Estimated ha that will be declared as free growing	200 ha
Estimated total full time equivalent positions generated	12 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat creation	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

2.8 Cariboo Region Special Studies Summary

Rank	Project Name and Short Description	FRBC's Cost 2001/2002
	Site Productivity Adjustment: To review the opportunity to revise the site indices by site series for the whole Cariboo Forest Region	$500 000
	Caribou Habitat Enhancement: Increase available caribou habitat by thinning or rehabilitating over dense pine stands in the west.	$50 000
	Methodology for Identifying Commercial Thinning Opportunities: Create a decision support tool to help locate and evaluate suitable CT areas.	$25 000
	Root Rot Study in Horsefly: Study between the MoF and West Fraser	$7 000

Appendix A. RMP Contact and Support Personnel

Management Unit	Name	Affiliation
Cariboo Forest Region	Guy Newsome	MOF
	Ray Leduc	MOF
	Becky Bings	MELP
	Jane Perry	RMP coordinator
Quesnel TSA	Brad Powell	MOF, Quesnel district
	Al Hunter	West Fraser
	Rob Cochrane	West Fraser
	Gerry Powell	Weldwood
	Grant Glessing	Tolko
	Charles von Hahn	Slocan Forest Products
Williams Lake TSA	Gerry Chapman	MOF, Williams Lake district
	Brian Rosengren	MOF, Chilcotin district
	George Malfair	MOF, Horsefly district
	Tim Harding	Riverside Forest Products
	Kim Peel	Lignum
	Shane Schofield	Weldwood
	Guy Burdikin	West Fraser
	Jason Pope	Yun Ka Whuten
100 Mile House TSA	Carolyn Krawchuck	MOF, 100 Mile House district
	Jeff Mycock	Ainsworth
	Val Duffin	Weldwood
	Kim Peel	Lignum

Appendix B. References Supporting the Sustainable Harvest Component

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CARIBOO FOREST REGION SUMMARY
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	13056	10601	9401	8916	8816	25.61	334300
Spacing	3738	3874	3960	3985	4227	484.19	1809900
Pruning	50	65	65	65	65	1099.56	55000
Fertilizing	1450	2100	1800	1630	1600	368.96	535000
Other	300	300	300	300	300	537.17	161159
Totals hectares	18594	16940	15526	14896	15008	155.71	2,895,359
Planning and prescriptions							165900
Total dollars							3,061,259
Forest Health Enhancement							
Spacing	145	145	145	145	145	482.70	70000
Pruning	20	20	0	0	0	999.04	20000
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	165	165	145	145	145	545.26	90,000
Habitat Supply and Biodiversity Enhancement							
Treatments	120	100	100	100	100	833.21	100000
Domestic Range							
Treatments	0	0	0	0	0	0.00	0
Enhanced Forestry Activities - Management Unit Total							
Surveys	13056	10601	9401	8916	8816	25.61	334,300
Spacing	3883	4019	4105	4130	4372	484.13	1,879,900
Pruning	70	85	65	65	65	1,070.83	75,000
Fertilizing	1450	2,100	1,800	1,630	1,600	368.96	535,000
Other stand tending activities	420	400	400	400	400	621.70	261159
Totals hectares	18879	16805	15371	14741	14853	163.43	3,085,359
Planning and prescriptions							165,900
Studies funding							556155
Total dollars							3,807,414

8/8/2005

CARIBOO FOREST REGION SUMMARY

Backlog Program Table

For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	13321	5541	3960	2944	2841	26.13	348040
Site preparation	242	80	35	50	50	817.30	197800
Planting	398	365	255	190	240	500.74	199150
Brushing	1080	855	666	840	765	548.60	592330
Max. density spacing	310	175	175	175	175	510.46	158250
Totals hectares	15350	7016	5091	4199	4071	97.43	1,495,570
Seed purchase	351000	133000	98000	188000	258000	0.30	107000
Total legal obligations							1,602,570
Backlog Reforestation							
Surveys	33839	26679	23652	22925	22972	25.98	879160
Site preparation	526	311	311	210	200	542.64	285600
Planting	1217	1170	786	535	495	685.10	833843
Brushing	3556	2566	2082	1994	1872	490.58	1744367
Totals hectares	39138	30726	26831	25664	25539	95.63	3,742,970
Seed purchase	722600	607800	273000	363000	361000	0.26	186117
Prescriptions and planning dollars							203500
Total backlog reforestation							4,132,587
Impeded areas							
Surveys	11246	10869	10055	9055	7186	27.02	303880
Brushing	3049	2862	1617	1685	1492	466.46	1422000
Density spacing	3247	2486	901	100	0	456.27	1481300
Totals hectares	17541	16217	12574	10840	8678	182.84	3,207,180
Prescriptions and planning dollars							476500
Total impeded areas							3,683,680
Site Restoration							
Fill planting	50	50	50	150	150	399.82	20000
Rehabilitation	110	160	110	110	110	881.66	97000
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	160	210	160	260	260	730.95	117,000
Seed purchase	40000	40000	40000	40000	40000	0.40	16000
Prescriptions and planning dollars							30000
Total site restoration							163,000
Backlog Program Activities - Management Unit Total							
Surveys	58406	43089	37667	34924	32999	26.21	1531080
Site preparation	878	551	456	370	360	660.79	580400
Planting	1665	1585	1091	875	885	632.48	1052993
Brushing	7684	6283	4366	4519	4129	489.16	3758697
Density spacing	3557	2661	1076	275	175	461.00	1639550
Totals hectares	72190	54168	44655	40963	38548	118.61	8562720
Seed purchase	1113600	780800	411000	591000	659000	0.28	309117
Prescriptions and planning							710,000
Recommended studies							26000
Total backlog program							9,607,837

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

CARIBOO FOREST REGION SUMMARY
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2001/02 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1and Type 2 silviculture strategies

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3) Estimates of annual growth rate increase from each type of treatment over no treatment. **Potential volume/ha gain (m3/ha/yr) provincial factors:**	0.34	0	0.25	0	1.9	1	0	0	0.33	
Years the factor will affect:	65	65	70	80	80	75	65	60	60	
2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%. **Provincial factors for estimated value gain at harvest**							5-15%	15-30%	1-5%	
3) Corporate commitment to employment Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare. **Est. short term employment rate (person days/ha) provincial factors:**	0.1	0.34	0.1	0.95	2	2.61	2.5	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2001/2002			
Backlog area planted from backlog table	1,665		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	1,665		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			13,056
Total backlog surveys from the backlog table.			58,406
33% of all silviculture surveys			23,582
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			23,582
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2001/2002			3,747
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2001/2002			10,945

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 20

CARIBOO FOREST REGION SUMMARY

Performance Measures Based on Activities Planned for 2001/2002

Based on Type 1and Type 2 silviculture strategies

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	1,665	0	23,582	878	1,665	7,684	7,440	70	1,450	44,854	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	1	0	0	0.33		
1.2	Years the factor will apply	65	65	70	80	80	75	65	60	60		
1.3	Pot. total merch. volume increment in 65 years (m3)	36,793	0	412,692	0	253,059	576,295	0	0	28,710		1,307,550
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			3,747								3,747
1.5	Est. area that will be declared as free growing (ha)			10,945								10,945
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	2.5	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	166	0	2,358	834	3,330	20,055	18,599	318	261	4,485	
3.3	Estimated total full time equivalent positions (FTE)	1	0	13	5	18	111	103	2	1	25	280
4.1	**Forest Health Enhancement (ha)**											165
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											120
5.3	Est. area with secondary value provided to biodiversity (ha)											20

CARIBOO FOREST REGION SUMMARY
Management Unit Summary Table
For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	18,879	16,805	15,371	14,741	14,853	163	3,085,359
Planning, prescriptions and seedlings							722,055
Backlog Program Field Activities	72,190	0	0	0	0	119	8,562,720
Planning, prescriptions and seedlings							1,045,117
Totals	91,069	16,805	15,371	14,741	14,853		13,415,251

Performance Measures

Potential total merchentable volume increment in 65 years	1,307,550 m^3
Estimated ha that will be reclassified as stocked	3,747 ha
Estimated ha that will be declared as free growing	10,945 ha
Estimated total full time equivalent positions generated	280 FTEs
Forest health enhancement area	165 ha
Planned area for specific wildlife forage or habitat creation	120 ha
Estimated area with secondary value provided to biodiversity	20 ha

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 3
CURRENT REFORESTATION

September 30, 2000

TABLE OF CONTENTS

PART 3 CURRENT REFORESTATION COMPONENT

3.1 Regional Current Reforestation Issues and Priorities 3
  3.1.1 Quesnel Forest TSA Current Reforestation Table 4
  3.1.2 Williams Lake TSA Current Reforestation 5
  3.1.2 100 Mile House TSA Current Reforestation Table 6

3.1 Regional Current Reforestation Issues and Priorities

The district requiring the largest investment for current reforestation is the Chilcotin district, where there are several recent larger wildfires that were never salvage logged or regenerated. The district expects to survey and plant several hundred hectares of these fires over the term of this RMP. Initial backlog Silviculture Prescriptions have been prepared, but will not be signed pending funding.

The Quesnel and Williams Lake forest districts only have small areas to plant. No requests for funding were received from the Horsefly or 100 Mile House forest districts for the 2000/2001 RMP.

3.1.1 Quesnel Forest TSA Current Reforestation Table

QUESNEL TSA

Current Reforestation

For the 2001/02 Fiscal Year

	Five-year Plan Goals (ha)					Annual Plan 2001/02		
Activities	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Planning/surveys/prescriptions	90	0	7	10	58	25	$3.0	H
2 Site preparation	0	0	5	0	1	0	$0.0	
3 Planting	17	0	0	0	0	300	$5.1	C
4 Brushing	0	0	0	10	10	0	$0.0	
5 Max. density spacing	0	0	0	2	0	0	$0.0	
6 Studies	0	0	0	0	0	0	$0.0	
7 Other	0	0	0	0	0	0	$0.0	
Totals hectares	107	0	12	22	69	0	$8.1	
Seed purchase	0	0	0	0	0	0	$0.0	
Total funding							$8.1	

3.1.2 *Williams Lake TSA Current Reforestation*

WILLIAMS LAKE TSA

Current Reforestation

For the 2001/02 Fiscal Year

	Five-year Plan Goals (ha)					**Annual Plan 2001/02**		
Activities	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Planning/surveys/prescriptions	756	36	946	132	240	$19	14.14	H
2 Site preparation	23	0	0	0	0	$435	10.00	L
3 Planting	6	90	200	200	250	$436	2.40	C
4 Brushing	36	0	0	0	0	$440	15.84	H
5 Max. density spacing	0	100	100	100	100	$0	0.00	
6 Studies	0	0	0	0	0	$0	0.00	L
7 Other	0	0	0	0	0	$0	0.00	L
Totals hectares	798	226	1246	432	590	$41	42.38	
Seedling purchase	98200	100000	100000	10000	10000	$0.26	26	
Total funding							68	

Priority is critical, high, moderate, low

3.1.2 100 Mile House TSA Current Reforestation Table

No table provided.

CARIBOO FOREST REGION
Current Reforestation
For the 2001/02 Fiscal Year

Activities	Five-year Plan Goals (ha)					Annual Plan 2001/02		
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Planning/surveys/prescriptions	846	36	953	142	298	$20	$17.1	H
2 Site preparation	23	0	5	0	1	435	$10.0	H
3 Planting	23	90	200	200	250	333	$7.5	C
4 Brushing	36	0	0	10	10	440	$15.8	H
5 Max. density spacing	0	100	100	102	100	0	$0.0	
6 Studies	0	0	0	0	0	0	$0.0	L
7 Other	0	0	0	0	0	0	$0.0	L
Totals hectares	905	226	1258	454	659	45	$50.5	
Seedling purchase	98200	100000	100000	10000	10000	0	$25.9	
Total funding							$66.4	

Priority is critical, high, moderate, low

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 4
FOREST HEALTH MAINTENANCE

September 30, 2000

TABLE OF CONTENTS

PART 4 FOREST HEALTH MAINTENACE COMPONENT

4.1 Regional Forest Health Maintenance Issues and Priorities.......... 3
  4.1.2 Protection of Current Inventory Sub-program.......... 8

4.1 Regional Forest Health Maintenance Issues and Priorities

Weather conditions in the Cariboo Forest Region over the last four years have been very favourable for bark beetle population growth. As a result, bark beetles have been expanding exponentially in some areas of the region. The mountain pine beetle (IBM) is the most destructive agent currently affecting forest resources within the region. The region contains 8.2 million ha, of which 5.6 million ha are managed for timber. Of this, approximately 3 million ha are composed of pure or mixed pine stands. Over 50% of the mature pine forests within the Cariboo region are currently at risk to damage from this bark beetle. If mountain pine beetle is not aggressively managed, this insect will undoubtedly have a significant impact on the future of the region's timber supply and the economic viability of the local forest industry.

The most recent outbreak has been active since 1995, despite continuous control actions. Funding received to date has produced stable or reduced beetle expansion in most areas. Based on overview surveys, it is conservatively estimated that there are currently in excess of 100,000 ha of pine forest heavily infested. Although much less a significant threat at this time (compared to IBM), Douglas-fir beetle (IBD) and spruce beetle (IBS) are, nevertheless, also increasing rapidly.

The main goals of the Cariboo Forest Region Bark Beetle Management Strategy are to:

- increase long-term forest resource productivity through bark beetle management practices;
- mitigate damage within the infested portion of the provincial forest; and
- prevent additional bark beetle population growth wherever possible, when the bark beetle epidemic is unavoidable.

To attain the goals outlined above, it is necessary to implement an Integrated Bark Beetle Management Strategy for the region, including all forest districts and parks. The plan would be based on good initial detection, which involves a complete annual aerial pest survey to ensure consistent and accurate monitoring and detection of bark beetles and other forest health problems. After aerial detection, bark beetle incidence must be verified through ground surveys. Where feasible, infested stands must then be treated to protect forest values and to increase forest productivity, as necessary, to support annual rates of harvest. Within the context of the regional plan, the region has taken a very aggressive management approach to control and prevent bark beetle epidemics within the regional boundaries.

The most significant risk from the IBM and the IBD is the potential impact on the long-term timber supply and targets of the Cariboo Chilcotin Land Use Plan (CCLUP). If the current level of infestation persists, the long-term timber supply within the Cariboo Forest Region will be reduced significantly. The most recent TSR indicates that potential harvest levels were very sensitive to mature timber values. Currently, three of the five forest districts are applying nearly all their available AAC for bark beetle control, and the two remaining districts also have a considerable proportion of their cut focused on IBM and IBD. A significant loss in revenue can occur as a result of unsalvaged timber losses, degradation of wood quality, and decreased stumpage values.

Values at risk, other than timber loss, are varied in the region, and include recreation, visual quality objectives, wildlife habitat (caribou, moose, mule deer), biodiversity targets, riparian zones, trapping and guiding, range and fisheries.

There are 35 provincial parks (excluding Tweedsmuir Park) and seven ecological reserves located in the region. Bark beetle management is often linked to problems in provincial parks and protected areas within the region. Currently, all parks in the region are included in the regional aerial pest overview survey. After consultation with Parks representatives, and based on what was detected during the aerial surveys, IBM infestations that have been mapped may be probed and possibly felled and burned. Most parks have low IBM infestations that can be eliminated cheaply and effectively. Schoolhouse Park (100 Mile House district) and Kluskoil Lake Park (Quesnel district) have large, untreatable infestations, and are currently having access plans developed to control IBM as it expands out of the park.

Historically, IBM has been the most destructive insect in the Cariboo Forest Region. The last outbreak collapsed in the mid-1980's. Population increases of IBM over the last five years are very similar to the beginning of the previous outbreak (Figure 1), suggesting that aggressive management is necessary to avoid a repeat of the last catastrophe. IBM has been increasing in all forest districts since 1995 (Figure 2).

Winter mortality for IBM over the winter was at an unprecedented low (Figure 3). The R-value (ratio of beetle attack to progeny production) was very high, indicating again that the populations are on the rise (Figure 3). Both winter mortality and R-values have been following a similar trend over the last five years in the region (Figure 4).

Douglas-fir beetle and spruce beetle have also been increasing. The area infested by IBD increased by 40% from 1998. The volume killed has quadrupled since 1998, while the number of infestations has increased over six times. The pattern is also similar with IBS with the area infested, volume killed and number of infestations increasing 50%, 400% and 100%, respectively. R-values for Douglas-fir beetle indicate increasing populations.

Figure 1: Infested Area (ha) Killed by Mountain Pine Beetle in the Cariboo Forest Region: 1974 - 1999

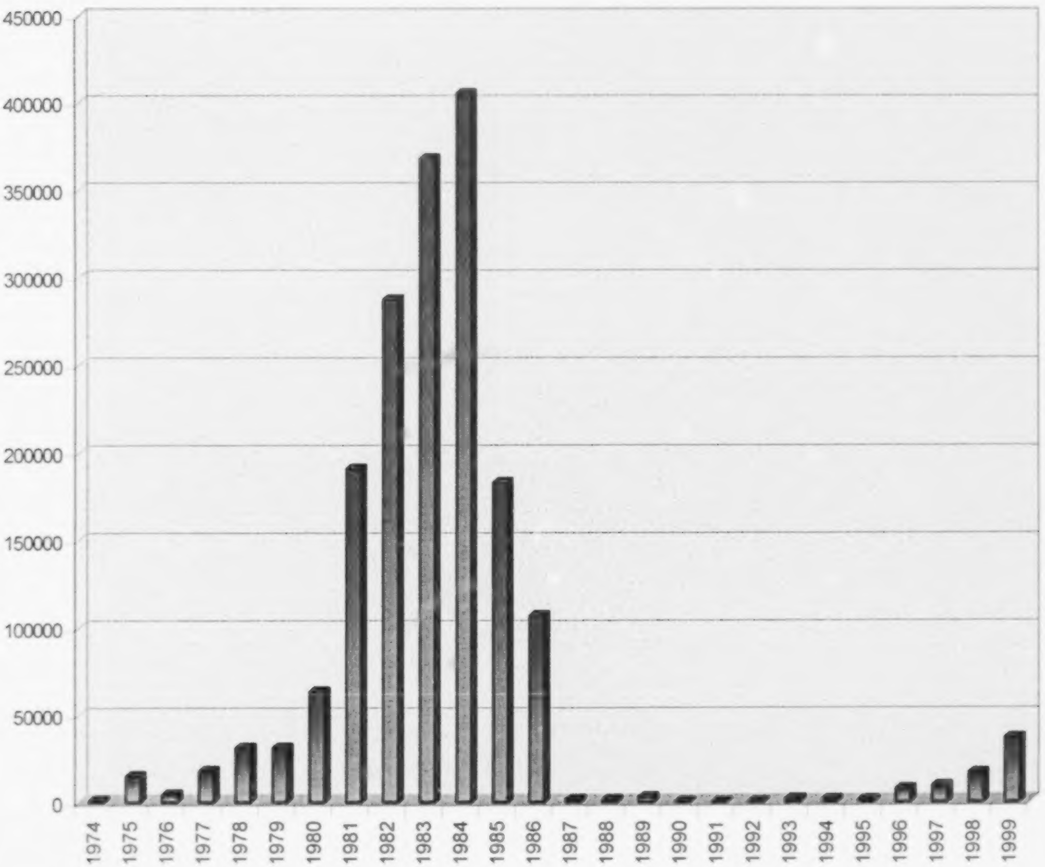


Figure 2: Timber Area Infested by Mountain Pine Beetle within the Cariboo Forest Region: 1996-1999

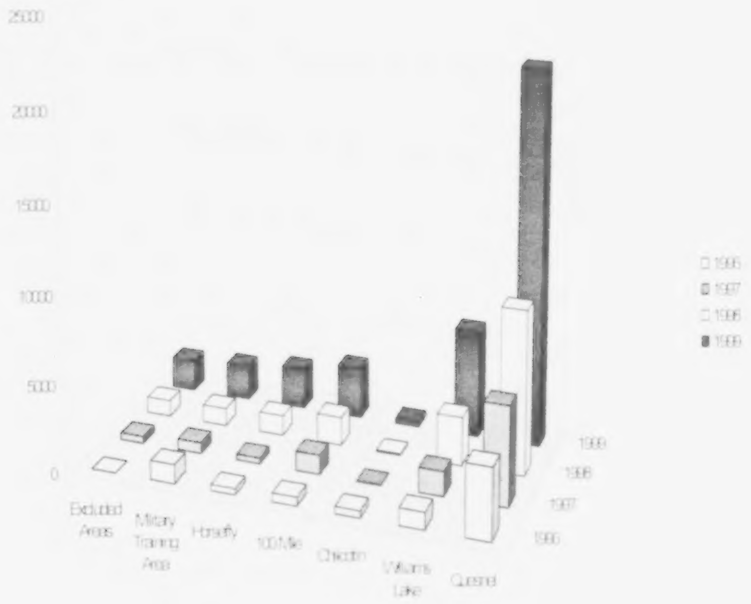


Figure 3: Average Winter Mortality and R-Values of Mountain Pine Beetle in the Cariboo Forest Region by Forest District: 2000

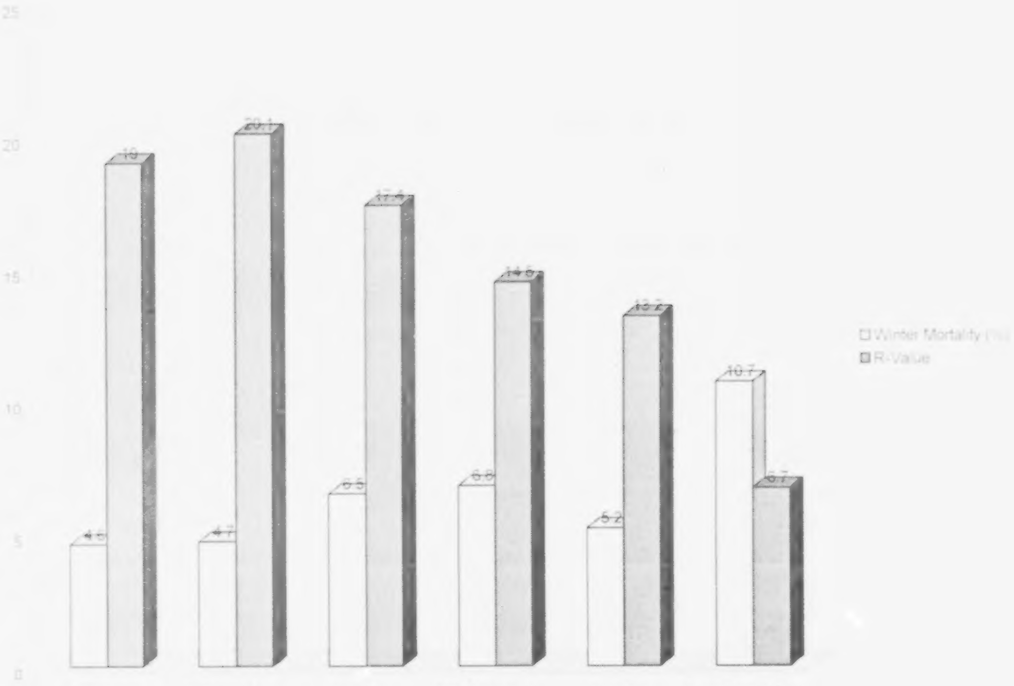


Figure 2: Timber Area Infested by Mountain Pine Beetle within the Cariboo Forest Region: 1996-1999

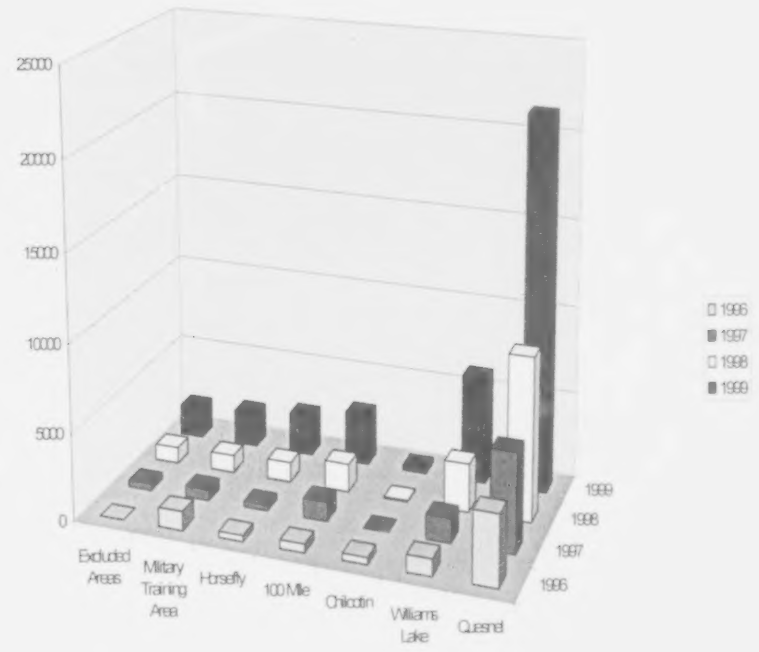


Figure 3: Average Winter Mortality and R-Values of Mountain Pine Beetle in the Cariboo Forest Region by Forest District: 2000

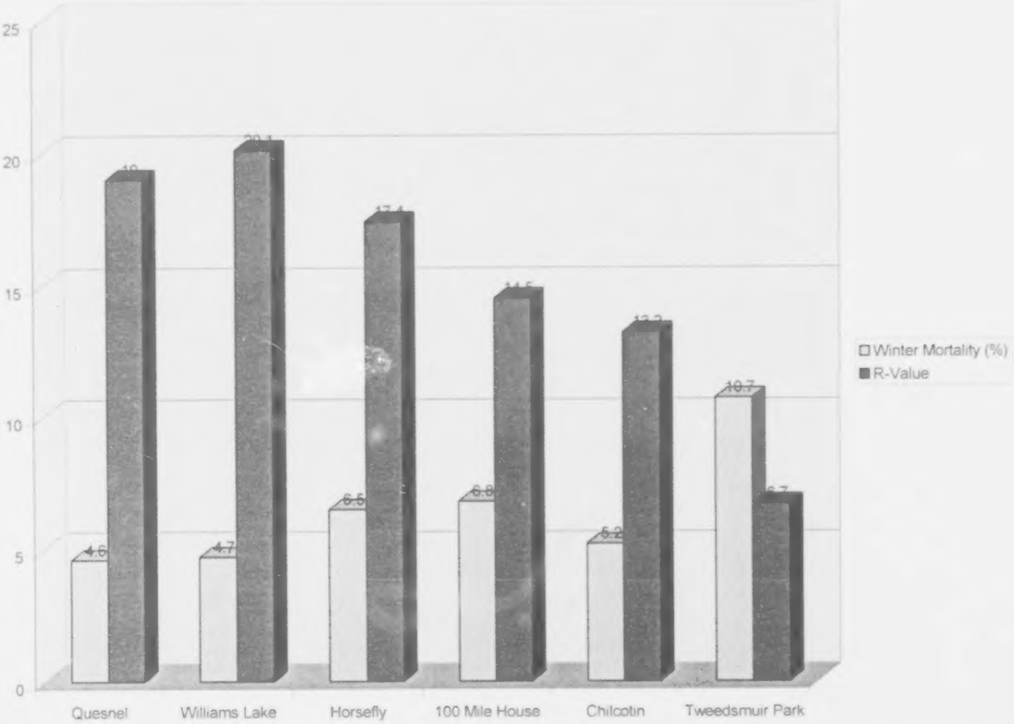
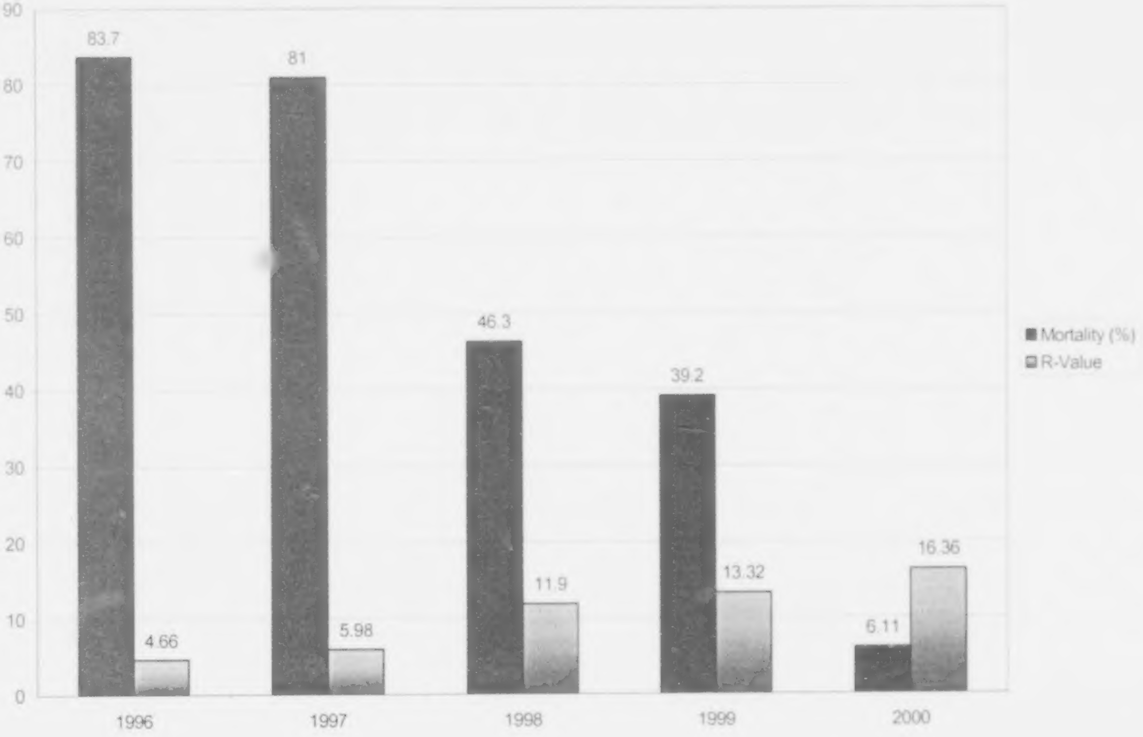


Figure: 4: Winter Mortality and R-Values for Mountain Pine Beetle in the Cariboo: 1996 - 2000



4.1.2 Protection of Current Inventory Sub-program

Quesnel TSA Forest Health Table

QUESNEL FOREST DISTRICT

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

		Five-year Plan Goals					Annual Plan 2001/02		
Activities	**Units**	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	16000	16000	15000	10000	10000	$52	$830	H-C
2 Defoliator spraying	ha	0	0	0	0	0	0	0	
Totals hectares		16000	16000	15000	10000	10000			
3 Aerial Surveys	hrs flying time	70	75	75	60	60	600	42	H
4 Fall and burn treatment	trees	12300	8000	6000	4000	3000	55	680	C
5 Winter Mortality Survey	number	0	0	0	0	0	0	0	
6 Pheromone baiting	trees	8500	5000	4000	3000	2000	21	182	H
7 Studies	number	5	3	3	3	3	56,500	283	C
8 Other (helicopter log)	trees	6400	7000	5000	4000	3000	50	320	C
9 Trap Trees	number								
10 Training	Days								
11 Co-op Hire	number								
Totals		43275	36078	30078	21063	18063		$2,336	

Priority is critical, high, moderate, low

Quesnel TSA Forest Health Performance Measures Table

Quesnel TSA Forest Health Performance Measures

Activity	Unit		
Aerial Surveys - Overview	100% of district mapped (1 830 000 ha)	100	
Aerial Surveys - Detailed	45% of district mapped (823 500 ha)	45	
Ground Surveys	65% of infestations surveyed (Includes Licensees)	65	
Treatments	% of currently detected infestations addressed by:		
Expedited Harvesting	70% or 2 700 000 Cubic metres	70	2700000
Deferred and baited	30% or 1 200 000 Cubic metres	30	1200000
Single Tree Removal	2300 Cubic metres	0.05	2300
Fall and Burn Treatment	562 Trees to date, expect to do 4000 more	0.05	2250
MSMA Treatment	"0" Trees	0	
Abandoned for salvage	5% or 200 000 Cubic metres	5	200000
Unsalvagable	1% or 50 000 Cubic metres (mostly WTP's)	1	50000
Defoliator Treatment	"0" Hectares treated	0	

Williams Lake TSA Forest Health Table

WILLIAMS LAKE TSA SUMMARY

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

Activities	Units	Five-year Plan Goals					Annual Plan 2001/02		
		2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	7600	5700	5800	5900	6000	$54	409	C
2 Defoliator spraying	ha	700	700	700	700	700	25	18	C
Totals hectares		8300	6400	6500	6600	6700			
3 Aerial Surveys	hrs flying time	79	70	80	80	80	$543	43	C
4 Fall and burn treatment	trees	8400	7000	7100	7200	7300	61	516	C
5 Winter Mortality Survey	number	0	0	0	0	0	0	0	
6 Pheromone baiting	trees	2400	1500	1600	1700	1800	18	44	C - H
7 Studies	number	0	0	0	0	0	0	0	
8 Other - Helilog	trees	4500	4500	4500	4500	4500	60	270	C - H
9 Trap Trees	number	200	200	200	200	200	30	6	H
10 Training	Days	0	0	0	0	0		0	
11 Co-op Hire	number	0	0	0	0	0		0	
Totals		23879	19670	19980	20280	20580		$1,306	

Priority is critical, high, moderate, low

Williams Lake TSA Forest Health Performance Measures Table

Williams Lake TSA Performance Measures

Activity	Unit	%	Cubic Meters
Aerial Surveys - Overview	% of district mapped (ha)		
Aerial Surveys - Detailed	% of district mapped (ha)	10 - 90	
Ground Surveys	% of infestations surveyed	85	
Treatments	% of currently detected infestations addressed by:		
Expedited Harvesting	% / Cubic metres		1.2 million
Deferred and baited	% / Cubic metres		58000
Single Tree Removal	Cubic metres		16500
Fall and Burn Treatment	Trees		3300
MSMA Treatment	Trees		
Abandoned for salvage	% / Cubic metres	15	
Unsalvagable	% / Cubic metres	7.5	2000
Defoliator Treatment	Hectares treated		

100 Mile House TSA Forest Health Table

100 MILE HOUSE FOREST DISTRICT

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

		Five-year Plan Goals					Annual Plan 2001/02		
Activities	Units	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	15000	15000	10000	10000	10000	$20	$300	C
2 Defoliator spraying	ha	12000	12000	10000	10000	5000	30	360	H
Totals hectares		27000	27000	20000	20000	15000			
3 Aerial Surveys	hrs flying time	60	60	60	60	60	$700	42	C
4 Fall and burn treatment	trees	5000	5000	5000	4000	4000	40	200	C
5 Winter Mortality Survey	number	0	0	0	0	0	0	0	
6 Pheromone baiting	trees	1500	1500	1500	1500	1500	20	30	C
7 Studies (Armillaria)	number	2	1	1	1	1	15,000	30	H
8 Helilog single tree	number	4000	4000	4000	2500	2500	60	240	C
9 Trap trees	number	400	400	400	400	400	50	20	C
10 Training	Days	0					0		
11 co-op hire	number	4	4	4	4	4	15,000	60	H
Totals		37966	37965	30965	28465	23465		$1,282	

Priority is critical, high, moderate, low

100 Mile House TSA Forest Health Performance Measures Table

100 Mile House Forest District Performance Measures

Activity	Unit	%	Cubic Meters
Aerial Surveys - Overview	100% of district mapped 1,234,000 (ha)	100	
Aerial Surveys - Detailed	8% of district mapped 98,720(ha)	8	
Ground Surveys	95% of infestations surveyed	95	
Treatments	% of currently detected infestations addressed by:		
Expedited Harvesting	10% / 450,000 cubic metres	10	450 000
Deferred and baited	30% / 150,000 cubic metres	30	150 000
Single Tree Removal	20% / 20,000 cubic meters	20	20 000
Helilog single trees	20% / 18,000 trees / 8000 cubic meters	20	8000
Fall and Burn Treatment	10% / 4800 trees	10	
MSMA Treatment	0% / 0 trees	0	
Abandoned for salvage	0 % / 0 cubic metres	0	
Unsalvagable	10% / 5000 cubic metres	10	5000
Defoliator Treatment	8400 hectares treated	8400	

Cariboo Forest Regional Office Forest Health

REGIONAL OFFICE FH ACTIVITIES SUMMARY

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

Cariboo Regional Office

		Five-year Plan Goals					Annual Plan 2001/02	
Activities	**Units**	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)
1 Ground Surveys*	ha	1530	1530	1250	1250	1250	$37	$57
2 Defoliator spraying	ha	10000	10000	6000	6000	6000	30	300
Totals hectares		11530	11530	7250	7250	7250		
3 Aerial Surveys**	hrs flying time	320	320	320	320	320	$391	125
4 Fall and burn treatment	trees	0	0	0	0	0	0	0
5 Winter Mortality Survey	number	1450	34800	34800	34800	34800	21	30
6 Pheromone baiting***	trees	7375	7000	6500	6000	5500	20	148
7 Studies	number	0	0	0	0	0	0	0
8 Other Helilog	trees							0
9 Trap Trees	number							0
10 Training	Days	36	36	36	36	36	375	14
11 Co-op Hire	number							0
Totals		20711	53686	48906	48406	47906		$673

Priority is critical, high, moderate, low

* Monitoring,for Bark Beetles, Defoliators, Diseases, PSPs etc

** Includes aerial overview survey, digitizing and related mapping duties

*** Pheromone purchase

Cariboo Forest Regional Office Forest Health Performance Measures Table

Cariboo Region Performance Measures

Activity	Unit	%	
Aerial Surveys - Overview	% of district mapped (ha)	100	8,200,000
Aerial Surveys - Detailed	% of district mapped (ha)	>1	10,000
Ground Surveys	% of infestations surveyed	N/A	
Treatments	% of currently detected infestations addressed by:	N/A	
Expedited Harvesting	% / Cubic metres	N/A	
Deferred and baited	% / Cubic metres	N/A	
Single Tree Removal	Cubic metres	N/A	
Fall and Burn Treatment	Trees	N/A	
MSMA Treatment	Trees	N/A	
Abandoned for salvage	% / Cubic metres	N/A	
Unsalvagable	% / Cubic metres	N/A	
Defoliator Treatment	Hectares treated		10,000

Cariboo Forest Region Summary Forest Health Table

CARIBOO FOREST REGION TOTAL

Forest Health Maintenance Activities

For the 2001/02 Fiscal Year

		Five-year Plan Goals					Annual Plan 2001/02		
Activities	**Units**	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	40130	38230	32050	27150	27250	$40	1595	C
2 Defoliator spraying	ha	22700	22700	16700	16700	11700	30	678	C
Totals hectares		62830	60930	48750	43850	38950			
3 Aerial Surveys	hrs flying time	514	525	535	520	520	$473	243	C
4 Fall and burn treatment	trees	25700	20000	18100	15200	14300	54	1396	C
5 Winter Mortality Survey	number	1450	34800	34800	34800	34800	21	30	
6 Pheromone baiting	trees	19775	15000	13600	12200	10800	20	404	C - H
7 Studies	number	7	4	4	4	4	43,995	313	
8 Other - Helilog	trees	14900	15500	13500	11000	10000	56	830	C - H
9 Trap Trees	number	600	600	600	600	600	43	26	H
10 Training	Days	36	36	36	36	36		14	
11 Co-op Hire	number	4	4	4	4	4		60	
Totals		125816	147399	129929	118214	110014		$5,587	

Priority is critical, high, moderate, low

CARIBOO FOREST REGION TOTAL
Forest Health Maintenance Activities
For the 2001/02 Fiscal Year

Activities	Units	Five-year Plan Goals					Annual Plan 2001/02		
		2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	40130	38230	32050	27150	27250	$40	1595	C
2 Defoliator spraying	ha	22700	22700	16700	16700	11700	30	678	C
Totals hectares		62830	60930	48750	43850	38950			
3 Aerial Surveys	hrs flying time	514	525	535	520	520	$473	243	C
4 Fall and burn treatment	trees	25700	20000	18100	15200	14300	54	1396	C
5 Winter Mortality Survey	number	1450	34800	34800	34800	34800	21	30	
6 Pheromone baiting	trees	19775	15000	13600	12200	10800	20	404	C - H
7 Studies	number	7	4	4	4	4	43,995	313	
8 Other - Helilog	trees	14900	15500	13500	11000	10000	50	830	C - H
9 Trap Trees	number	600	600	600	600	600	43	26	H
10 Training	Days	36	36	36	36	36		14	
11 Co-op Hire	number	4	4	4	4	4		60	
Totals		125816	147399	129929	118214	110014		$5,587	

Priority is critical, high, moderate, low

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 5
ENHANCING ENVIRONMENTAL VALUES

September 30, 2000

TABLE OF CONTENTS

PART 5 ENHANCING ENVIRONMENTAL VALUES COMPONENT
CARIBOO FOREST REGION *1*
SEPTEMBER 30, 2000 1
TABLE OF CONTENTS 2
5.1 REGIONAL SUMMARY OF ENHANCING ENVIRONMENTAL VALUES ISSUES AND PRIORITIES 3
5.2 CRITERIA 3
5.2.1 Regional List of Criteria Used to Derive the Relative Ranking of Watersheds and Determine Key Watersheds *4*
5.2.1.1 Target Fish Species 4
5.2.1.2 Bucket Base Map for the Cariboo Forest Region 4
5.2.1.3 List of Key Buckets 5
5.2.2 Criteria Used to Designate Key Watersheds into Categories I to V *8*
5.3 SUMMARY OF REGIONAL PRIORITY SETTING 10
5.4 WATERSHED STATUS REPORT 14
5.4.1 Table 3(a), All Watershed Units *14*
5.4.2 Table 3(b), Watershed Units with Existing Projects *19*
5.5 ENHANCING ENVIRONMENTAL VALUES RESEARCH 24
5.5.1 Regional Prioritized List of Needs for Research and Intensive Effectiveness Monitoring *24*
5.5.2 Rationale for the Need *25*
5.6 EEV ROAD PRIORITIES 25
5.6.1 Priority Setting *25*
5.6.2 Spreadsheet Key *27*
APPENDIX A. CONTACT AND SUPPORT PERSONNEL 32
APPENDIX B. REFERENCES SUPPORTING EEV COMPONENT 32

5.1 Regional Summary of Enhancing Environmental Values Issues and Priorities

The main issue and priority for the Enhancing Environmental Values (EEV) strategic objective is the Watershed Restoration Program (WRP). The vision of WRP is to speed the recovery of fish habitat and water quality in priority key watersheds across the province that have been damaged or which are seriously threatened by past forest development activities.

The goals of WRP are to:

1. Restore and protect fish habitat and water quality in priority key watersheds adversely affected by forest harvesting practices that, without intervention, would require decades to recover naturally.
2. Provide better knowledge, information and tools to strengthen sustainable management of watersheds.
3. Provide community-based employment, training and stewardship opportunities.

5.2 Criteria

Guidelines were provided as a benchmark to achieve objectives for developing the EEV strategic objective for the 2001/2002 Resource Management Plan. The process to develop key products to achieve these objectives is as follows:

1. **Identify Key Buckets**
   A regional list (and GIS-based map) of high-priority watersheds was developed by MELP using watershed sub-basins called 'buckets' developed for the Cariboo Forest Region. These buckets were ranked according to MELP's criteria for high fish value and domestic water supply. In conjunction with this process, the Department of Fisheries and Oceans (DFO) ranked its high priority buckets to form a key bucket list.

2. **Review and Rank the Bucket List**
   This list was reviewed by Ministry of Forests (MOF) district staff and ranked, and included district priorities. Ranking included forestry-related current issues within district buckets that continue to impact fisheries and domestic water supply values.

3. **Aggregate Ranking**
   Ranking information collected from each process was then incorporated into a multi-agency ranking for each of the key buckets.

4. **Consultation**
   The multi-agency ranking list was then discussed with licensee stakeholders from the three TSAs within the Cariboo Forest Region—Williams Lake, Quesnel and 100 Mile House. From this consultation, 20% of the key buckets were selected as satisfying FRBC 2001/2002 funding objectives.

5.2.1 Regional List of Criteria Used to Derive the Relative Ranking of Watersheds and Determine Key Watersheds

The scoring and ranking of the bucket watersheds was not revisited in 2000. Proponents accepted and invested in the identified watersheds without conflict last year and this process was left as is for the 2001/2002 RMP. For reference, the criteria are as follows.

5.2.1.1 Target Fish Species

Concerns have been raised in the Cariboo Forest Region for a number of fish species and stocks. After a review of the database and from local knowledge, MELP and DFO have identified the target fish species and stocks depending on (a) threatened status, (b) uniqueness, and (c) fish species/stocks below conservation level.

The following is a list of identified fish species/stocks of concern for the region and rationale for their selection. One or more of these target species may be present within the key buckets identified within this RMP.

Rainbow trout (RB): Surveys have shown that 70% of all fish caught by anglers in the Cariboo Forest Region were rainbow trout. This species contributes significantly to the economy of the region. Rainbow trout are stream spawning and rearing obligatory and, as such, are sensitive to stream disturbances caused by land development. Many of the rainbow trout populations are isolated stocks with restricted ranges and locally adapted traits.

Bull trout (BT), (Dolly Varden Char): The BC Conservation Data Centre has blue-listed bull trout as sensitive due to its global decline in distribution and abundance. Bull trout are stream spawning and rearing obligatory and have very specific stream requirements. These requirements include cool temperatures, unobstructed stream migration routes and stable stream substrate with good cover. Bull trout appear to be very sensitive to stream disturbances caused by land development.

Chiselmouth (CMC) and **Brassy Minnow** (BMC): The BC Conservation Data Centre considers chiselmouth and brassy minnow as blue-listed species due to their limited distribution in BC. The two species' habitat requirements are poorly documented, and therefore, a precautionary approach is required. Restoring pre-harvesting stream conditions is desired.

Salmon (Chinook, coho and sockeye): DFO to date have identified a high priority on chinook as the target species, although it is know that special management considerations are in place for coho and sockeye as well. All three species are present in most of the region. Some additional work in the future may need to be completed to address these species as target fish species in the Cariboo region.

5.2.1.2 Bucket Base Map for the Cariboo Forest Region

Buckets are used as land area units for restoration in the Cariboo-Chilcotin region instead of complete watersheds or sub-basins. The bucket map would also be used as the regional base map for watershed restoration prioritization.

Of 398 buckets in the Cariboo Forest Region, 133 key buckets were identified and ranked across the region. Key buckets were identified on the basis of selected target fish species and presence of domestic water supply point of diversion (POD). These target fish-bearing and domestic water supply buckets were ranked on the basis of a qualitative estimation of the degree of impact and cause.

From this point onward, the buckets will be referred by bucket numbers, with cross reference to the drainage name for convenient locating on the base map.

5.2.1.3 List of Key Buckets

Table 1 provides a list of the identified key buckets for the region. The table shows the drainage within which the bucket is located, the buckets as identified by bucket number, the types and number of target fish species, and the presence of a domestic water supply point of diversion corresponding to each of the key buckets. Some buckets were included in the list if harvesting activities in those buckets could have impacts on the downstream fish-bearing habitat.

Key buckets for ranking were initially identified by MELP Fisheries incorporating information from, but not limited to, biological studies and watershed assessments, and satisfying the obligations of the Cariboo-Chilcotin Land Use Plan.

Table 1. Buckets containing target fish species and water supply point of diversion (POD)

P indicates presence
(P) indicates likelihood of presence, but further inventory required.

			Fish species present					
Forest District	Drainage Name	Bucket #	Rainbow Trout	Bull Trout	Chisel-mouth	Brassy Minnow	Chinook	POD
Quesnel	John Boyd	493	P	P			P	P
	Lightning	494	P	P			P	P
	Lower Nazko	381	P		P		P	P
	Willow	103	P	P			(P)	P
	Antler	100	P	P			(P)	P
	Fontaine	488	P	(P)				P
	Clisbako	391	P				(P)	P
	Cunningham	486	P	P			(P)	
	Swift River	483	P	P			P	
	Little Swift	490	P	P				
	Narcosli	291	P				P	P
	Victoria Creek	478	P	P				
	Sovereign	491	P	P				
	Umiti	496	P					
	Mid Nazko	381a	P		P		P	
	Big Valley	106	P	P			(P)	
	Lower Bowron	104	P	P			(P)	P
	Matthew	489	P	P				
	Fraser	283	P	P			P	P
		283a	P	P			P	P
	Ramsay Ck	293	P					
	Wentworth	392	P					
	Merston	296	P					P

			Fish species present					
Forest District	Drainage Name	Bucket #	Rainbow Trout	Bull Trout	Chisel-mouth	Brassy Minnow	Chinook	POD
Quesnel (cont.)	Bazaeko	401	P	P			(P)	
		409	P	P			P	
		420	P	P			P	
	Tregallis	102	P	P				
	Ketchum	109	P	P			(P)	
	Kimball	487	P	P				
	Mcfarlane	398	P					
	Snaking	407	P					
	Bazaeko	394	P	P				
		399	P				P	
		402	P					
	Coglistiko	414	P					
	Summit	105	P	P				
	Udy	413	P					
	Webster	289	P					
	Twan	286	P					
	Unnamed	295	P					
		298	P					
Williams Lake	Williams Lake	265a	P					P
	Lower Big Creek	142a	P	(P)			(P)	P
	Lower Churn	243a	P	P			(P)	P
	McLeese Lk	290	P					P
	Hawks Creek	284	P				(P)	P
	Fredy/Beedy	462	P					P
	Chimney	271	P					P
	Mons Creek/Lake	165	P					P
	Cooper Creek	158	P					P
	150 Mile	280	P					P
	Rose Lake	285	P					P
	Upper Churn	243	P	P				
	Hungry Valley	142	P					
Horsefly	McKinley	445	P			P	(P)	P
	Wolverine	472a	P					P
	North Arm	464c	P	P				P
	Woodjam	451	P					P
	Horsefly Mainstem	453	P			P	P	P
	Keithley	480	P	P				P
	Mid Quesnel River	464a	P	P			P	P
	Likely	464b	P				P	P
	Moffat	448	P				P	P
	Cariboo Lake	472	P	P			P	P
	Little River	479	P	P			P	
	Bill Miner	464	P	P				
	Rollie	477	P					
	Roaring River	473	P	P				
	McKusky	450	P					
	Spanish	468	P	P				
	Sellers	470	P	P				
	Polley	463	P					
	Molybdenite	447	P					
	Wasko	467	P					

Forest District	Drainage Name	Bucket #	Fish species present					POD
			Rainbow Trout	Bull Trout	Chisel-mouth	Brassy Minnow	Chinook	
Horsefly (cont.)	Grain Creek	469	P					
	Upper Horsefly	455	P					
	Hen Ingram	465	P					P
	Tisdale	452	P					
	Watt Creek	475	P					
	Beaver Valley	456a	P				(P)	P
	Cameron	485						
100 Mile House	Bonaparte River	77	P				P	P
	Young Lake	77a	P				P	P
	Fiftyseven Creek	86	P				P	P
	Chasm	87	P					P
	Fiftynine Creek	90	P					P
	Scott Creek	91	P					P
	Rayfield River	93	P					P
	Eagan Lake	96	P					P
	Cutoff Valley Creek	82	P					P
	Clinton	84	P					P
	Loon Lake	81	P					P
	Brown Creek	95	P					
	Murphy Lake	371	P					P
	Bridge	357a	P					P
	San Jose	273	P					P
	Jim	360	P					P
	Gorge Cr/Deadman	78	P					P
	Hamilton/Deadman	85	P					P
	Lang Lake	371a	P					P
	Watch Lake	99	P					P
	Bridge/Canim	357	P					P
	Bradley	368	P					P
	Peach Creek	374	P					P
	Coffee	378	P					
	Boss	372	P					
	Hendrix	375	P					
	Deception	373	P					
	Spanish	377	P					
	Joe Ross Cr/Deadman	88	P					
	Green Lake	94	P					P
	No name (?) Creek	376	P					

			Fish species present					
Forest District	Drainage Name	Bucket #	Rainbow Trout	Bull Trout	Chisel-mouth	Brassy Minnow	Chinook	POD
Chilcotin	Chilcotin Lake	124b	P	(P)	(P)		(P)	P
	Hanceville	180	P	P			P	P
	Chilcotin	119	P	P			P	P
	Alexis Creek	190	P	P			P	P
	Upper Chilcotin	124	P	P			P	
	Haines Creek	171	P					P
	Anaham Creek	185	P					P
	Alexis Lakes	187	P					P
	Clusko	130	P		(P)		(P)	
	Charlotte Lake	70	P					P
	Kappan Lake	74	P					
	Scum Lake	171a	P					
	Zenzaco	184	P					P
	Avon Creek	188	P					P
	Mosley Creek	332a	P	P				
	Punkutlaenkut	131	P	P			(P)	
	S. Anahim Creek	186	P					
	Nimpo Creek	194	P					
	Upper Chilcotin	124a	P	P	(P)			
	Tatlayoko	327	P	P				P
		327a	P	P				P

5.2.2 Criteria Used to Designate Key Watersheds into Categories I to V

There are now five categories for key watersheds, as described below.

Category I: *Watersheds that have known impacts from pre-Code forestry but are still functional watersheds that will potentially benefit from restoration activities.*
These watersheds are known to have experienced forestry-related habitat impairment or water-quality degradation in a portion of the watershed (at least 15% of the total area), or are believed to have a forestry-related threat to fish habitat or water quality, but still with significant areas of good quality habitat. It is believed that restoration activity can be rapidly focused on improving conditions or preventing damage before it occurs (e.g., roads with high risk of failure). Category I watersheds can also include those portions of a watershed that contain important identified target species and are upstream of agricultural or urbanized areas, or supply water to a community intake that is upstream of other land uses. Where the important habitat areas are affected by other land uses, the watershed is not Category I. This category may include watersheds where restoration activity has previously occurred.

Category II: *Watersheds with impacts from pre-Code forestry as well as other land uses (including private land), for which there is a coordinated restoration plan in place.*
The watershed must still be functional and able to benefit from coordinated restoration activity. Restoration will require a coordinated approach to address all of the land-use impacts. WRP activities in Category II watersheds must be coordinated with other funding sources, such as Fisheries Renewal BC or the Habitat Restoration Salmonid Enhancement Program, to

significantly affect fish recovery or water quality improvement. This category may include watersheds where restoration activity has previously occurred.

Category IIB: *Watersheds with significant impacts from other land use, including private land, but where there is no coordinated restoration plan in place.*
Restoration of these watersheds through activity only if the forest land will potentially provide low benefit because of impacts from other land uses such as agriculture, mining or residential development.

Category III: *Watersheds with minimal or no pre-Code forestry-related impairment of fish habitat or water quality.*
In these cases, restoration activity may not be required or may not be cost-effective in relation to a small, incremental improvement in fish habitat or water quality. This category includes watersheds with little or no forest development.

Category IV: *Watersheds known to be impacted to such an extent that restoration effort is unlikely to be successful.*
These watersheds are believed to have experienced such extensive habitat or hillslope damage that expenditures will be so high and restoration time so slow that it is not cost-effective to restore.

Category V: *Watersheds with insufficient data to make a determination*
Watersheds with no assessment surveys are temporarily on hold and are subject areas for overview assessments. They do not become candidate watersheds for restoration activity until more is known about their status, but they are not rejected at this point either.

Information used to place watersheds into these categories is based on assessments completed to date and knowledge of the watershed by industry and/or agency. The preliminary category of each of the designated key watersheds is included in table 3(a), which is provided in section 5.4.1. A considerable amount of subjectivity was used to categorize these key watersheds, and as increased knowledge of the watershed is brought forward, the category of the watershed may have to change.

5.3 Summary of Regional Priority Setting

Table 3 lists the buckets by forest district and gives the bucket rankings by MELP Fisheries and Water Management, DFO and MOF. The multi-agency ranking was determined as the final step.

Table 3. Cariboo Forest Region key buckets

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Quesnel	John Boyd	493	42,559	H	H	H	H	**H**	West Fraser
	Lightning	494	24,547	H	H	H	H	**H**	Weldwood
	Lower Nazko	381	42,256	H	H	H	H	**H**	
	Willow	103	54,864	H	H	H	H	**H**	Weldwood
	Antler	100	28,342	H	H	H	H	**H**	
	Fontaine	488	7,106	H	H	H	H	**H**	West Fraser
	Clisbako	391	67,444	H	H	H	H	**H**	
	Cunningham	486	16,639	H	L	H	H	**H**	Weldwood
	Swift River	483	39,957	H	L	H	H	**H**	
	Little Swift	490	12,812	H	L	H	H	**H**	Weldwood
	Narcosli	291	25,312	H	H	H	H	**H**	
	Victoria Creek	478	24,572	H	L	H	H	**H**	
	Sovereign	491	12,449	H	L	H	H	**H**	
	Umiti	496	15,256	H	L	H	H	**H**	West Fraser
	Mid Nazko	381a	42,167	H	L	H	H	**H**	
	Big Valley	106	21,655	H	L	H	H	**H**	West Fraser
	Lower Bowron	104	33,572	H	H	H	H	**H**	
	Matthew	489	39,744	H	L	L	H	**H**	Weldwood
	Fraser	283	63,812	L	H	H	H	**H**	
		283a	44,197	L	H	H	H	**H**	
	Ramsay Creek	293	29,206	H	L	H	H	**H**	
	Wentworth	392	15,444	H	L	H	H	**H**	
	Merston	296	27,586	H	H	L	L	**H**	
	Bazaeko	401	42,820	H	L	H	H	**H**	
		409	21,006	H	L	H	H	**H**	
		420	20,508	H	L	H	H	**H**	
	Tregallis	102	9,445	H	L	H	H	**H**	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Quesnel (cont.)	Ketchum	109	12,826	H	L	L	L	**H**	West Fraser
	Kimball	487	6,807	H	L	L	H	**L**	
	Mcfarlane	398	11,326	L	L	H	H	**L**	
	Snaking	407	17,633	H	L	L	L	**L**	
	Bazaeko	394	13,917	L	L	H	H	**L**	
		399	9,944	L	L	H	H	**L**	
		402	6,734	L	L	H	H	**L**	
	Coglistiko	414	12,591	L	L	H	H	**L**	
	Summit	105	6,702	H	L	L	H	**L**	
	Udy	413	22,145	H	L	L	L	**L**	
	Webster	289	20,261	L	L	L	L	**L**	
	Twan	286	36,635	L	L	L	L	**L**	
	Unnamed	295	6,600	L	L	L	L	**L**	
	Unnamed	298	9,222	L	L	L	L	**L**	
Williams Lake	Williams Lake	265a	32,367	H	H	H	H	**H**	
	Lower Big Creek	142a	26,406	H	H	L	H	**H**	Riverside
	Lower Churn	243a	30,575	H	H	H	H	**H**	
	McLeese Lake	290	15,580	H	H	L	H	**H**	
	Hawks Creek	284	38,379	L	H	H	H	**H**	
	Fredy/Beedy	462	26,187	H	H	L	L	**H**	
	Chimney	271	44,212	L	H	L	H	**H**	
	Mons Creek/Lake	165	7,999	L	H	L	H	**H**	Riverside
	Cooper Creek	158	10,855	H	H	L	L	**L**	
	150 Mile	280	26,043	L	H	L	L	**L**	
	Rose Lake	285	9,963	L	H	L	L	**L**	
	Upper Churn	243	38,639	H	L	L	L	**L**	
	Hungry Valley	142	24,745	H	L	L	L	**L**	
Horsefly	McKinley	445	38,898	H	H	H	H	**H**	Weldwood
	Wolverine	472a	19,535	H	H	H	U	**H**	
	North Arm	464c	36,549	H	H	H	H	**H**	
	Woodjam	451	9,302	H	H	H	H	**H**	
	HorseflyMainstem	453	31,890	H	H	H	U	**H**	Riverside
	Keithley	480	15,090	H	H	H	H	**H**	
	Mid Quesnel River	464a	42,083	H	H	H	U	**H**	
	Likely	464b	67,025	H	H	H	U	**H**	
	Moffat	448	44,562	H	H	H	H	**H**	Weldwood
	Cariboo Lake	472	25,868	H	H	L	H	**H**	Lignum

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
Horsefly (cont.)	Little River	479	38,772	H	L	H	H	**H**	Weldwood
	Bill Miner	464	49,105	H	L	H	H	**H**	
	Rollie	477	6,131	H	L	H	H	**H**	Lignum
	Roaring River	473	19,598	H	L	H	H	**H**	West Fraser
	McKusky	450	32,000	H	L	H	H	**H**	Riverside
	Cameron	485	35,289	H	L	H	H	**H**	Weldwood
	Spanish	468	12,904	H	L	L	H	**H**	
	Sellers	470	8,811	H	L	L	H	**H**	Weldwood
	Polley	463	9,851	H	L	H	U	**H**	West Fraser
	Molybdenite	447	8,222	H	L	H	H	**H**	Weldwood
	Wasko	467	11,350	H	L	H	L	**H**	
	Grain Creek	469	11,378	H	L	H	H	**H**	Weldwood
	Upper Horsefly	455	46,384	L	L	H	H	**H**	Riverside
	Hen Ingram	465	9,131	H	H	L	L	**H**	West Fraser
	Tisdale	452	7,030	H	L	L	L	**L**	
	Watt Creek	475	9,984	L	L	H	H	**L**	
	Beaver Valley	456a	41,538	H	H	L	U	**H**	MELP
100 Mile House	Bonaparte River	77	35,717	H	H	H	H	**H**	Weldwood/Ainsworth/SBFEP
	Young Lake	77a	40,051	H	H	H	H	**H**	Weldwood/Ainsworth/SBFEP
	Fiftyseven Creek	86	12,820	H	H	H	H	**H**	
	Chasm	87	14,903	H	H	H	H	**H**	
	Fiftynine Creek	90	10,952	H	H	H	H	**H**	
	Scott Creek	91	6,261	H	H	H	H	**H**	
	Rayfield River	93	41,754	H	H	H	H	**H**	
	Eagan Lake	96	17,264	H	H	H	H	**H**	
(Community	Cutoff Valley Creek	82	11,922	H	H	H	H	**H**	
Watersheds)	Clinton	84	14,057	H	H	H	H	**H**	
	Loon Lake	81	37,580	H	H	L	H	**H**	
	Brown Creek	95	6,445	H	L	H	H	**H**	
	Murphy Lake	371	31,490	H	H	L	H	**H**	
	Bridge	357a	72,753	H	H	L	H	**H**	Ainsworth/SBFEP
	San Jose	273	12,903	H	H	L	H	**H**	Weldwood/Ainsworth
	Jim	360	39,828	H	H	L	H	**H**	Weldwood/Ainsworth/SBFEP
	Gorge Creek/Deadman	78	4,151	H	H	L	H	**H**	
	Hamilton/Deadman	85	11,419	H	H	L	H	**H**	
	Lang Lake	371a	27,977	H	H	L	H	**H**	

MOF District	Drainage Name	Bucket No.	Area (ha)	MELP Fisheries Ranking	MELP Water Mgmt Rkg.	DFO Ranking	MOF Ranking	Multi-Agency Ranking	Associated Licencee
100 Mile House (cont.)	Watch Lake	99	7,834	L	H	L	H	**H**	
	Lower Bridge/Canim	357	45,152	L	H	L	H	**H**	
	Bradley	368	23,268	L	H	L	H	**H**	
	Peach Creek	374	9,443	L	H	L	H	**H**	
	Coffee	378	11,432	H	L	L	H	**H**	Weldwood
	Boss	372	13,889	H	L	L	H	**H**	
	Hendrix	375	15,978	H	L	L	H	**H**	Weldwood
	Deception	373	32,240	H	L	L	H	**H**	Weldwood
	Spanish	377	14,876	H	L	L	H	**H**	
	Joe Ross Cr/Deadman	88	9,548	H	L	L	H	**L**	
	Green Lake	94	24,916	L	H	L	L	**L**	
	No name (?) Creek	376	6,083	L	L	L	H	**L**	
Chilcotin	Chilcotin Lake	124b	30,366	H	H	H	H	**H**	
	Hanceville	180	26,256	H	H	H	U	**H**	
	Chilcotin	119	27,669	H	H	H	L	**H**	
	Alexis Creek	190	31,215	H	H	L	H	**H**	
	Upper Chilcotin	124	27,252	H	L	H	H	**H**	
	Haines Creek	171	43,951	L	H	L	H	**H**	
	Anaham Creek	185	46,058	L	H	L	H	**H**	Lignum and Riverside
	Alexis Lakes	187	30,443	L	H	L	H	**H**	Lignum and Riverside
	Tatlayoko	327	49,023	H	H	L	H	**H**	Riverside
	Tatlayoko	327a	25,477	H	H	L	H	**H**	Riverside
	Clusko	130	45,815	H	L	L	H	**L**	
	Charlotte Lake	70	39,374	L	H	L	L	**L**	
	Kappan Lake	74	16,911	L	L	L	H	**L**	
	Scum Lake	171a	18,243	L	L	L	H	**L**	
	Zenzaco	184	11,965	L	H	L	H	**L**	
	Avon Creek	188	16,039	L	H	L	H	**L**	
	Mosley Creek	332a	43,570	H	L	L	L	**L**	Riverside
	Punkutlaenkut	131	32,943	L	L	H	L	**L**	
	S. Anahim Creek	186	11,830	L	L	L	H	**L**	
	Nimpo Creek	194	12,616	L	L	L	L	**L**	
	Upper Chilcotin	124a	41,653	L	L	L	L	**L**	

5.4 Watershed Status Report

5.4.1 *Table 3(a), All Watershed Units*

MOF District	Bucket Name	Bucket Number	Are there significant pre-Code forestry impacts to fish habitat or water quality?	Is it likely that restoration efforts will be successful?	Recipient	MYA Number	Partners
Quesnel	John Boyd	493	Yes	Yes	West Fraser	CCM98106	
	Lightning	494	Unknown	Unknown	Weldwood	CCM98105	
	Lower Nazko	381	Unknown				
	Willow	103	yes	Yes	Weldwood	CCM98106	
	Willow – Crescent Creek	103	Yes	Yes	West Fraser	CCM98106	
	Antler	100	Unknown				
	Antler – Russian Creek	100	Yes	Yes	West Fraser	CCM98106	
	Fontaine	488	Yes	Yes	West Fraser	CCM98106	
	Clisbako	391	Unknown				
	Cunningham	486	Yes	Yes	Weldwood	CCM98106	
	Swift River	483	Unknown				
	Little Swift	490	Yes	Yes	Weldwood	CCM98106	
	Narcosli	291	Unknown				
	Victoria Creek	478	No				
	Sovereign	491	Yes	Yes	West Fraser	CCM98106	
	Umiti	496	Yes	Yes	West Fraser	CCM98106	
	Mid Nazko	381a	Unknown				
	Big Valley	106	Yes	Yes	West Fraser	CCM98106	
	Lower Bowron	104	Unknown				
	Matthew	489	Yes	Yes	Weldwood	CCM98106	
	Fraser	283	yes				
		283a	Unknown				
	Ramsay Creek	293	Unknown				
	Wentworth	392	Unknown				
	Merston	296	Unknown				
	Bazaeko	401	Unknown				
		409	Unknown				
		420	Unknown				
	Tregallis	102	Unknown				
	Ketchum	109	Yes	Yes	West Fraser	CCM98106	

MOF District	Bucket Name	Bucket Number	Are there significant pre-Code forestry impacts to fish habitat or water quality?	Is it likely that restoration efforts will be successful?	Recipient	MYA Number	Partners
	Kimball	487	Unknown	Yes	Weldwood	CCM98106	
	Mcfarlane	398	Unknown				
	Snaking	407	Unknown				
	Bazaeko	394	Unknown				
		399	Unknown				
		402	Unknown				
	Coglistiko	414	Unknown				
	Summit	105	Unknown				
	Udy	413	Unknown				
	Webster	289	Unknown				
	Twan	286	Unknown				
	Unnamed	295	Unknown				
		298	Unknown				
Williams Lake	Williams Lake	265a					
	Lower Big Creek	142a			Riverside	CCM98203	
	Lower Churn	243a					
	McLeese Lake	290					
	Hawks Creek	284					
	Fredy/Beedy	462	Yes	Yes	Weldwood	CCM98205	
	Chimney	271					
	Mons Creek/Lake	165			Riverside	CCM98203	
	Cooper Creek	158					
	150 Mile	280					
	Rose Lake	285					
	Upper Churn	243					
	Hungry Valley	142					
	Bambrick Creek	161					
	Unnamed Creek	166					
	Big Creek Mainstem	142b					
	Groundhog Creek	155					
	Gaspard Creek	168					
	Farwell Creek	170					

MOF District	Bucket Name	Bucket Number	Are there significant pre-Code forestry impacts to fish habitat or water quality?	Is it likely that restoration efforts will be successful?	Recipient	MYA Number	Partners
Horsefly	McKinley	445	Yes	Yes	Weldwood	CCM98205	
	Wolverine	472a	Unknown	Yes			
	North Arm	464c	Yes	Yes			
	Woodjam	451	Yes	Yes	Weldwood	CCM98205	
	Horsefly Mainstem	453	Yes	Yes	Riverside	CCM98203	
	Keithley	480	Yes	No		CCM98203	
	Mid Quesnel River	464a	Unknown	Unknown			
	Likely	464b	Unknown	Unknown			
	Moffat	448	Yes	Yes	Weldwood	CCM98205	
	Cariboo Lake	472	Yes	Yes	Lignum	CCM98204	
	Little River	479	Yes	Yes	Weldwood	CCM98205	
	Bill Miner	464	Yes	Yes			
	Rollie	477	Yes	Yes	Lignum	CCM98204	
	Roaring River	473	Yes	Yes	West Fraser	CCM98206	
	McKusky	450	Yes	Yes	Riverside		
	Cameron	485	Yes	Yes	Weldwood	CCM98205	
	Spanish	468	Yes	Yes	Weldwood	CCM98205	
	Sellers	470	Yes	Yes	Weldwood	CCM98205	
	Polley	463	Unknown	Unknown	West Fraser	CCM98206	
	Molybdenite	447	Yes	Yes	Weldwood	CCM98205	
	Wasko	467	Yes	Yes			
	Grain Creek	469	Yes	Unknown	Weldwood	CCM98205	
	Upper Horsefly	455	Yes	Yes	Riverside	CCM98203	
	Hen Ingram	465	No	N/A	West Fraser	CCM98206	
	Tisdale	452	Yes	Yes			
	Watt Creek	475	Yes	Yes			
	Beaver Valley	456a	Yes	Yes	MELP		
100 Mile House	Bonaparte River	77	Yes	Yes	Weldwood/ Ainsworth/SBFEP	CCM98305/ CCM98303	
	Young Lake	77a	Yes	Yes	Weldwood/ Ainsworth/SBFEP	CCM98305/ CCM98303	
	Fiftyseven Creek	86	Yes	Yes			
	Chasm	87	Yes	Yes			
	Fiftynine Creek	90	Yes	Yes			
	Scott Creek	91	Yes	Yes			
	Rayfield River	93	Yes	Yes			

MOF District	Bucket Name	Bucket Number	Are there significant pre-Code forestry impacts to fish habitat or water quality?	Is it likely that restoration efforts will be successful?	Recipient	MYA Number	Partners
100 Mile (cont.)	Eagan Lake	96	Yes	Yes			
(community	Cutoff Valley Creek	82	No	N/A			
watersheds)	Clinton	84	No	N/A			
	Loon Lake	81	Yes	Yes			
	Brown Creek	95	Yes	Yes			
	Murphy Lake	371	Yes	Yes			
	Bridge	357a	Yes	Yes	Ainsworth/SBFEP	CCM98303	
	San Jose	273	Yes	Yes	Weldwood/ Ainsworth	CCM98305/ CCM98303	
	Jim	360	Yes	Yes	Weldwood/ Ainsworth/SBFEP	CCM98305/ CCM98303	
	Gorge Creek/Deadman	78	Yes	Yes			
	Hamilton/Deadman	85	Yes	Yes			
	Lang Lake	371a	Yes	Yes			
	Watch Lake	99	Yes	Yes			
	Lower Bridge/Canim	357	Yes	Yes			
	Bradley	368	Yes	Yes			
	Peach Creek	374	Yes	Yes			
	Coffee	378	Yes	Yes	Weldwood	CCM98305	
	Boss	372	Yes	Yes	Weldwood	CCM98305	
	Hendrix	375	Yes	Yes	Weldwood	CCM98305	
	Deception	373	Yes	Yes	Weldwood	CCM98305	
	Spanish	377	Yes	Yes	Weldwood	CCM98305	
	Joe Ross Cr/Deadman	88	Yes	Yes			
	Green Lake	94	No	N/A			
	No name (?) Creek	376	No	N/A	Weldwood	CCM98305	

MOF District	Bucket Name	Bucket Number	Are there significant pre-Code forestry impacts to fish habitat or water quality?	Is it likely that restoration efforts will be successful?	Recipient	MYA Number	Partners
Chilcotin	Chilcotin Lake	124b					
	Hanceville	180					
	Chilcotin	119					
	Alexis Creek	190					
	Upper Chilcotin	124					
	Haines Creek	171					
	Anaham Creek	185			Lignum and Riverside	CCM98204/ CCM98203	
	Alexis Lakes	187			Lignum and Riverside	CCM98204/ CCM98203	
	Tatlayoko	327			Riverside	CCM98203	
	Tatlayoko	327a			Riverside	CCM98203	
	Clusko	130					
	Charlotte Lake	70					
	Kappan Lake	74					
	Scum Lake	171a					
	Zenzaco	184					
	Avon Creek	188					
	Mosley Creek	332a			Riverside	CCM98203	
	Punkutlaenkut	131					
	S. Anahim Creek	186					
	Nimpo Creek	194					
	Upper Chilcotin	124a					
	Moore Creek	132					
	Unnamed	129					
	Upper Bidwell	183					
	McDermott	169					
	Bidwell Creek	179					

5.4.2 Table 3(b), Watershed Units with Existing Projects

The codes are: C = Completed, O = Ongoing, P = Planned.

MOF District	Bucket Name	Bucket Number	Preliminary Watershed Category	Transition Watershed	Sub-Basin Name	Overview Assessments			Prescriptions			Works			Routine Effectiveness Eval'n .		
						Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
Quesnel	John Boyd	493	I	No	John Boyd	C	C	C	C			P			O		
	Lightning	494	V		Lightning		C	C									
	Lower Nazko	381	V					C									
	Willow	103	I	No	Crescent Cr	C	C	C	P		C	P		C	O		
		103	I	No	Rebman	C		C	O		C	O		C	O		O
	Antler	100	V			C	C	C									
		100	I	No	Russian Creek	C	C	C	C			P			O		
	Fontaine	488	I	No		C	C	C	C		C	P		C	O		P
	Clisbako	391	V	No	Clisbako		C	C		C	C		C	C		O	P
	Cunningham	486	I	No	Cunninham	C		C			O			P			
	Swift River	483	I	No	Fontain		C	C	O	C	C	O	C	C		O	O
		483	I	No	Bendixon	C	C	C									
		483	I	No	Porter	C	C										
	Little Swift	490	I	No	Little Swift	C	C	C	P		O	O		O			
	Narcosli	291	IIB			C	C	C		O	O		P	P			
	Victoria Creek	478	III			C	C		O		O			O			
	Sovereign	491	I	No		C	C	C	P		P	P		P	P		
	Umiti	496	I	No		C	C	C	P		P	P		P	O		
	Mid Nazko	381a	V					C									
	Big Valley	106	I	No		C	C	C	C		P	P		P	O		
	Lower Bowron	104	V														
	Matthew	489	I	No	Matthew	C		C	O		O	O		P	P		P
	Fraser	283	I														
		283a	V														
	Ramsay Creek	293	V				C	C			O			O			
	Wentworth	392	V					C									
	Merston	296	V				C	C		P	C		P	O			
	Bazaeko	401	V				C	C		C	P						
		409	V				C	C		C	P						
		420	V				C	C		C	P						
	Tregallis	102	V	No	Tregallis	C	C	C			O			P			

MOF District	Bucket Name	Bucket Number	Preliminary Watershed Category	Transition Watershed	Sub-Basin Name	Overview Assessments			Prescriptions			Works			Routine Effectiveness Eval'n		
						Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
	Ketchum	109	I	No		C	C	C	O		P	P		P	P		
	Kimball	487	V	No	Kimball	C		C			O			P			
	Mcfarlane	398	V				C	C									
	Snaking	407	V				C	C									
	Bazaeko	394	V				C	C									
		399	V				C	C									
		402	V				C	C									
	Coglistiko	414	V				C	C									
	Summit	105	V														
	Udy	413	IIB				C	C									
	Webster	289	I				C	C									
	Twan	286	I				C	C									
	Unnamed	295	I				C	C									
		298	I				C	C									
Williams Lake	Williams Lake	265a	I														
	Lower Big Creek	142a	I				C	C									
	Lower Churn	243a	I				C	C			O						
	McLeese Lake	290	I														
	Hawks Creek	284	I														
	Fredy/Beedy	462	I		Fredy, Beedy	C	C	C	C	C	O	C	C	O		P	P
	Chimney	271	I														
	Mons Creek/Lake	165	I				C	C									
	Cooper Creek	158	I	Yes			C	C									
	150 Mile	280	I				C	C									
	Rose Lake	285	I														
	Upper Churn	243	I				C	C									
	Hungry Valley	142	I	Yes			C	C									
	Bambrick Creek	161	I	Yes			C	C									
	Unnamed Creek	166	I	Yes			C	C									
	Big Creek Mainstem	142b	I	Yes			C	C			O						
	Groundhog Cr.	155	I	Yes			C	C									
	Gaspard Creek	168	I	Yes			C	C			O						
	Farwell Creek	170	I	Yes													

MOF District	Bucket Name	Bucket Number	Preliminary Watershed Category	Transition Watershed	Sub-Basin Name	Overview Assessments			Prescriptions			Works			Routine Effectiveness Eval'n		
						Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
Horsefly	McKinley	445	I			C	O	C	O	P	P	O	P	P			
	Wolverine	472a	I			P		C	P			P					
	North Arm	464c	I			C		C	O		P	O		P			
	Woodjam	451	I		Upper Woodjam	C	C	C	C	C	C	C	C	C			
	Horsefly Mainstem	453	I		Black Creek Area	C	C	C	C	O	O	O	O	O		O	O
	Keithley	480	IV			C		C	P			P					
	Mid Quesnel R.	464a	V			P			P			P					
	Likely	464b	V			P			P			P					
	Moffat	448	I		Upper Moffat	C	O	C	O	O	O	O	P	O			
	Cariboo Lake	472	I			C	C	C	C	P	C	O	P	O	P		
	Little River	479	I		Little River	P	C	C	P	C	P	P	O	O			
	Bill Miner	464	I			C	C	C	O	O	O	O	P	P			
	Rollie	477	I			C	C	C	O	C	C	O	C	C	P		
	Roaring River	473	I			C	C	C	O			O					
	McKusky	450	I			C	C	C	O			O					
	Cameron	485	I		Cameron	O			O			O					
	Spanish	468	I			C	C	C	O	P	P	O	P	P			
	Sellers	470	I			C		C	O			O					
	Polley	463	V			P	C	C	P			P					
	Molybdenite	447	I		Molybdenite	C	O	C	O	O	O	O	P	P			
	Wasko	467	I			C			C			C					
	Grain Creek	469	V		Grain	P	P	P	P			P					
	Upper Horsefly	455	I			C	P	P	O	P	P	O	P	P			
	Hen Ingram	465	III			C	C	C	O			O					
	Tisdale	452	I			C			C			O					
	Watt Creek	475	I			C			C			O					
	Beaver Valley	456a	I		Beaver Valley	C	C	C	P	C	C	P	O	P			

MOF District	Bucket Name	Bucket Number	Preliminary Watershed Category	Transition Watershed	Sub-Basin Name	Overview Assessments			Prescriptions			Works			Routine Effectiveness Eval'n		
						Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
100 Mile	Bonaparte River	77	II		Bonaparte River	C	C	C		O	O		O	O			
House	Young Lake	77a	I		Young	C	C	C	P/O		P	P/O		P			
	Fiftyseven Creek	86	I		Fiftyseven	C	C	C									
	Chasm	87	I		Chasm	C	C	C									
	Fiftynine Creek	90	I		Fiftynine Creek	C	C	C									
	Scott Creek	91	I		Scot Creek	C	C	C	O		O	O		O			
	Rayfield River	93	I		Rayfield River	C	C	C									
	Eagan Lake	96	I		Eagan Lake	C	C	C									
Community	Cutoff Valley Cr.	82	III		Cutoff Valley	C	C	C									
watersheds	Clinton	84	III		Clinton	C	C	C									
	Loon Lake	81	I		Loon	C	C	C									
	Brown Creek	95	I		Brown	C	C	C	O		O/P	O		O/P			
	Murphy Lake	371	I			C	C	C			C			O			
	Bridge	357a	I		Bridge Lake (portion of 357a)	C		C	P		P	P		P			O
	San Jose	273	II				C	C									
	Jim	360	I			O	P	C	P	P	C	P	P	O			
	Gorge Creek/ Deadman	78	I			C											
	Hamilton/ Deadman	85	I			C											
	Lang Lake	371a	I			C	C	C			O			O			
	Watch Lake	99	I		Watch Lake	C	C	C									
	Lower Bridge/ Canim	357	I		Lower Bridge/ Canim	C		C									
	Bradley	368	I			C	C	C		C	C		O	O	P		
	Peach Creek	374	I			C	C	C			O			O			
	Coffee	378	I			C	C	C			O			O			
	Boss	372	I			C	C	C		C	C		P	P			
	Hendrix	375	I		Hendrix	O		O	P		O			O	P		P
	Deception	373	I		Deception	C		C	C	N/A	C	C	N/A	O	O	N/A	O
	Spanish	377	I		Spanish	C		C	C	N/A	C	C	N/A	O	O	N/A	O
	Joe Ross Cr/ Deadman	88	I			C			O			O					
	Green Lake	94	III		Green Lake	C	C	C									
	No name (?) Cr.	376	III			C	C	C			O			O			

MOF District	Bucket Name	Bucket Number	Preliminary Watershed Category	Transition Watershed	Sub-Basin Name	Overview Assessments			Prescriptions			Works			Routine Effectiveness Eval'n .		
						Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
Chilcotin	Chilcotin Lake	124b	I														
	Hanceville	180	I														
	Chilcotin	119	I														
	Alexis Creek	190	I														
	Upper Chilcotin	124	I														
	Haines Creek	171	I														
	Anaham Creek	185	I	Yes	Anaham	C	C	C									
	Alexis Lakes	187	I	Yes													
	Tatlayoko	327	I	Yes	Tatlayoko	C	C	C		C	O		C	O		O	O
		327a	I	Yes	Tatlayoko	C	C	C		C	O		C	O		O	O
	Clusko	130	I	Yes	Clusko	C	C	C									
	Charlotte Lake	70	I														
	Kappan Lake	74	I														
	Scum Lake	171a	I														
	Zenzaco	184	I														
	Avon Creek	188	I														
	Mosley Creek	332a	I	Yes			C	C		O	O		O	O			
	Punkutlaenkut	131	I														
	S. Anahim Creek	186	I	Yes			C	C									
	Nimpo Creek	194	I														
	Upper Chilcotin	124a	I														
	Moore Creek	132	I	Yes													
	Unnamed	129	I	Yes													
	Upper Bidwell	183	I	Yes		C	C	C									
	McDermott	169	I	Yes													
	Bidwell Creek	179	I	Yes	Bidwell	C	C	C									

5.5 Enhancing Environmental Values Research

5.5.1 Regional Prioritized List of Needs for Research and Intensive Effectiveness Monitoring

Table 4 lists five research topics under Enhancing Environmental Values.

Table 4. Enhancing Environmental Values research needs.

Multi-year Agreement Holder	MYA Number	Research Topic or Need	Rationale	Partners	Forest District in which the proposed research will be conducted	Priority	Length of Study (years)	Estimated Total Cost
Ainsworth		The effectiveness of bio-engineering for slope stabilization	To determine the conditions under which bio-engineering techniques can be applied to obtain a significant improvement in cut and fill slope stabilization.					
MOF		The effectiveness of soil bioengineering	To determine the effectiveness of different structure types used for stabilizing erosive hillslope processes		Quesnel	1	2 more years for a total of 5 years	$27,000
Ainsworth		The effectiveness of fish passage structures.	To determine the most effective fish passage structures in replacing or upgrading current fish barrier culverts (i.e. arches, weirs, etc.)					
Weldwood of Canada Ltd. - Quesnel	CCM98105	Effectiveness of deactivation structures	Currently in the third year of this project in the Rebman Creek watershed		Quesnel	High	2 more years for a total of 5 years	$60,000
MELP		Determine long-term stability of in-stream structures of different anchoring techniques	To determine the most effective anchoring method for in-stream structures		Quesnel, Chilcotin	High	1	$15,000
MELP		Fish redistribution in new habitat	To determine the population dynamics of fish associated with newly accessed habitats with road crossing improvements.		100 Mile	High	3	$15,000

5.5.2 Rationale for the Need

5.6 EEV Road Priorities

5.6.1 Priority Setting

Priorities for activities under the Road and Hillslope Management Plan have been estimated by two different methods. While each program has its own basis for priority setting, a number of other criteria are relevant to MOF's business priorities. The business priority for each activity is based on the risk of not completing the work and, in the interim, is derived from district knowledge of road use by various resource road users, such as mining, range, timber and recreation. In time, standard definitions for each of these will be developed. Risks and priorities for the business priority are designated as VH (very high), H (high) or M/L (moderate/low). In comparison, the program priority is based on the criteria and processes that are unique to that program. For example, under the EEV component of the RMP, the program priorities have been set according to the guidelines for that component.

Table 6 provides a list of

Table 6. Some identified EEV priorities for upslope stabilization

						Business Drivers											
Road Management Area	**Bucket Number**	**Component Identifier**	**Access Strategy**	**Activity**	**Quantity: km or ha**	CCLUP Access Targets	Public Use	Provincial Revenue					**Business Priority**	**Program Priority**	**Pro-gram**	**Potential Proponent**	**Funding Pressure**
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(default km)			Tourism / Resorts	Mining & Mineral Explor'n	Tim-ber	Range/ Ranch-ing	Fish-ery					
Cottonwood	493 - John Boyd	600	Deactivation	RD, DF	35.904	H				H	M/L			H	EEV	FRBC	$107,712
Cottonwood	493 - John Boyd	3500	Deactivation	RD	42.364	H				M/L	M/L	VH		H	EEV	FRBC	$127,092
Cottonwood	490 - Little Swift	13L	Deactivation	RD	24.951	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	EEV	FRBC	$74,853
SPANISH	468	93A-053-033		RR	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
SPANISH	468	93A-053-050		RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$4,000
SPANISH	468	93A-054-001		RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
SPANISH	468	93A-054-003		HR	1 ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$40,000
SPANISH	468	93A-045-019		RD,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
SPANISH	468	93A-054-026		RR	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
SPANISH	468	93A-064-026		RD,RT	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$15,000
SPANISH	468	93A-054-020		RR,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
SPANISH	468	93A-064-025		RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$4,000
BILL MINER	464	93A-058-018		RR,LR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$4,000
BILL MINER	464	93A-058-005		RD,HR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$5,000
BILL MINER	464	93A-058-003		RD,LR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$5,000
BILL MINER	464	93A-058-227		RD	1	H	M/L	M/L	M/L	H	M/L	H	M/L	M/L	EEV	MOF	$8,000
BILL MINER	464	93A-058-249		RD,HR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$10,000
SELLER	470	93A-064-028		RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
SELLER	470	93A-064-027		RR	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$3,000
SELLER	470	93A-064-029		RD	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$2,000
SELLER	470	93A-064-016		RD	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
SELLER	470	93A-064-022		RD,RT	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$25,000
SELLER	470	93A-046-018		RD,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$10,000
SELLER	470	93A-064-081		RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$80,000
SELLER	470	93A-046-010		RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
LITTLE RIVER	479	8417-8421		RD,HR	4km,2ha	VH	H	VH	M/L	H	M/L	VH	VH	H	EEV	MOF	$60,000
UPPER CARIBOO R	472	HARVEY CR		RD,HR	15km,2ha	VH	H	M/L	VH	H	M/L	H	VH	H	EEV	MOF	$50,000
LITTLE RIVER	479	J ROAD		HR	1ha	VH	H	M/L	M/L	M/L	M/L	M/L	VH	H	EEV	MOF	$10,000
NORTHARM	464C	non-status		DAU	30	H	M/L	M/L	M/L	H	M/L	H	H	M/L	EEV	MOF	$25,000
MID QUESNEL R	464a	non-status		DAU	30	H	M/L	M/L	M/L	M/L	M/L	H	M/L	M/L	EEV	MOF	$25,000
LIKELY	464b	non-status		DAU	30	H	VH	H	H	H	M/L	H	H	M/L	EEV	MOF	$25,000
KEITHLEY	480	non-status		DAU	30	VH	VH	VH	VH	H	M/L	H	VH	H	EEV	MOF	$50,000

McKUSKEY	450	non-status		DAU	30	H	VH	VH	M/L	H	M/L	VH	H	M/L

5.6.2 Spreadsheet Key

A key to the EEV Roads spreadsheets for the Quesnel forest district (Table 8) and Horsefly forest district (Table 9) is provided as follows.

Road Management Area

This column identifies a land unit, which organizes the row information by watershed on an interim basis. In this way, the required outputs for EEV are easily transferred. Planning under EEV currently references core buckets by name and number, so both could be inserted here.

Bucket Number

This column identifies the land unit by bucket number(s). Several bucket numbers may comprise a watershed.

Component Identifier

This column identifies the road segment, system or network. This is typically the number or name of a road, although in the case of landslides, a unique identifier may be necessary.

Access Strategy

This column identifies the access strategy for each road as upgrade, maintain, deactivate, or rehabilitate. These can be used in conjunction with the activity codes to determine non-standard codes, which are primarily set by the RMP component guidelines.

Activity Codes

This column reflects a code that relates to some activity. Under EEV, FRBC codes include HR (hillslope rehabilitation) or RD (road deactivation However, the standard for these road codes has been extracted from the Forest Road Management System pilot for consistency with other RMP components. The codes are provided in Table 7.

Table 7. Activity codes and their expanded meaning for EEV Roads

Activity Code	Expanded Meaning	Activity Code	Expanded Meaning
GATE	Gate	DJ	Outslope road
CLS	Close	DK	Inslope road
RST	Restrict	DL	Install / repair erosion protection
NEW	Construction	DM	Install / repair sediment basins
RAC	Reactivation	DN	Revegetate
REL	Relocation	DO	Pull back sidecast
WID	Widening	MB	Carry out brushing
BREPAIR	Bridge Repair	MC	Remove snags and danger trees
BREPLACE	Bridge Replacement	MD	Clean ditches
RSM	Routine Surface Maintenance	ME	Clean culvert inlets and outlets
STRM	Structural Maintenance	MF	Grade surface
CC	Stabilize slopes	MG	Stabilize subgrade
CD	Rectify hazards	MH	Replace planks, delineators, etc.
DA	Install or repair cross-ditches	MI	Replace or repair cattleguard
DD	Remove cross-drains / stream culverts	MJ	Replace signs
DE	Clean or repair cross-drain / stream culverts	MK	Replace Culvert
DF	Back up cross-drain / stream culverts	NAC	No Action

Activity Code	Expanded Meaning	Activity Code	Expanded Meaning
DG	Clean ditches	HR	Hillside restoration
DH	Repair / replace bridges	LRU	Landing recontouring
DI	Remove bridges	RD	Road Deactivation
		RR	Road recontouring
		RT	Riparian Rehabilitation

Units

This column is simply the quantity of road, hill slope or site relating to the activity. The default for units is kilometers (km) of road.

Business Drivers

Three different criteria are used to assess the risk of not funding the specified activity in relation to both legislation and government function. Combining these criteria—CCLUP, public use and provincial revenue generators—describes the business drivers that rationalize the undertaking of work by the Ministry of Forests.

CCLUP Access Targets

Maintenance of access to various percentages of land units (polygons) have been identified in the Cariboo-Chilcotin Land-Use Plan. Since this is plan has been legislated as a higher level plan under FPC, there is a need for funding to meet maintenance requirements. This column in the spreadsheet is meant to reflect the risk of not maintaining access for the various resource users as described in the 90 day implementation report if funding is not provided.

Public Use

This column represents an indirect measure of risk to the government that potentially arises from public exposure and liability. The rating applies to the aggregate use of the watershed by the public in addition to any resource uses not exclusively classified as industrial. Public use includes hunting, fishing, trapping, First Nations interests, recreation, wildcraft, range, and guide outfitters.

Provincial Revenue Generators

The criteria falling under this category characterize the risk of lost revenue to the province if the work is not undertaken. In general, the risk relates the revenue foregone to the cost of doing the work. That is, if the work is not done there is a high risk that the province will forego income that exceeds the cost of the work, say $10,000 for example, in lost royalties (eg. stumpage), direct taxes, export taxes, and taxes on goods and services. Although this measure calls for some quantification, the risk rating are relatively qualified based on the best information currently available.

Tourism/Resorts

This column provides an estimate of the risk to provincial revenue that comes from Tourism. In the Cariboo region, the presence of resorts may help approximate more or less risk.

Mining and Mineral Exploration

Local knowledge of historical resource use of the land unit for this category is used to estimate the risk to provincial revenue foregone as a result of road failure.

Timber
This column provides an estimate of the risk to provincial revenue that relates to reduced reliability on fire protection, Standing Timber Inventory, timber access, wood manufacturing, silviculture, and other timber uses.

Range/Ranching
This column represents the risk to provincial revenue that comes from range use or ranching, including provincial income from permitting, taxes on animal sales, or expenditures on fencing.

Fishery
This column provides a relative estimate of risk to provincial income that is related to a sport and/or commercial fishery. This is one of the more difficult items to estimate because it is not part of the MOF business expertise.

Business Priority
This column is a visual average or approximation of the aggregate risk to MOF business, based on the identified business drivers.

Program Priority
This column represents the program priority that is assigned uniquely to each of the funding programs. For example, the priorities for EEV are based on VH, H, and M/L. Some systems will have a larger number of rating levels than others—four compared to three—so this needs to be flexible.

Funding Program
This column identifies how the different activities are grouped, such that the activities are considered for funding under each respective program's priorities.

Proponent
This column is an indication of which entity, government or private, that would likely be a proponent with which funds for the work could be negotiated, based on the "user pays" principle. For example, if mining interests wish to maintain 4x4 access on a road, then there is a need to negotiate responsibility for funding that activity.

Funding Pressure
This column is simply an estimate of the cost to complete the work under any given activity, without reference to time.

Table 8. EEV Roads spreadsheet for the Quesnel forest district

Road Management Area	Component Identifier	Activity	Units	Business Drivers							Business Priority	Technical Priority	Program	Potential Proponent	Funding Pressure
(eg. bucket)	(eg. 6000 Road)	(eg. RD)	(default Km)	CCLUP Access Targets	Public Use	Provincial Revenue									
						Tourism/ Resorts	Mining & Mineral Exploration	Timber	Range/ Ranching	Fishery					
468-SPANISH	93A-053-033	RR	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
468-SPANISH	93A-053-050	RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$4,000
468-SPANISH	93A-054-001	RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
468-SPANISH	93A-054-003	HR	1 ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$40,000
468-SPANISH	93A-045-019	RD,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
468-SPANISH	93A-054-026	RR	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$5,000
468-SPANISH	93A-064-026	RD,RT	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$15,000
468-SPANISH	93A-054-020	RR,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
468-SPANISH	93A-064-025	RD	1	H	H	M/L	H	H	M/L	H	M/L	M/L	EEV	MOF	$4,000
464-BILL MINER	93A-058-018	RR,LR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$4,000
464-BILL MINER	93A-058-005	RD,HR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$5,000
464-BILL MINER	93A-058-003	RD,LR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$5,000
464-BILL MINER	93A-058-227	RD	1	H	M/L	M/L	M/L	H	M/L	H	M/L	M/L	EEV	MOF	$8,000
464-BILL MINER	93A-058-249	RD,HR	1km,1ha	VH	M/L	M/L	M/L	H	M/L	VH	H	H	EEV	MOF	$10,000
470-SELLER	93A-064-028	RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
470-SELLER	93A-064-027	RR	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$3,000
470-SELLER	93A-064-029	RD	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$2,000
470-SELLER	93A-064-016	RD	1	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
470-SELLER	93A-064-022	RD,RT	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$25,000
470-SELLER	93A-046-018	RD,LR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$10,000
470-SELLER	93A-064-081	RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$80,000
470-SELLER	93A-046-010	RD,HR	1km,1ha	VH	H	M/L	H	H	M/L	VH	H	H	EEV	MOF	$5,000
479-LITTLE RIVER	8417-8421	RD,HR	4km,2ha	VH	H	VH	M/L	H	M/L	VH	VH	H	EEV	MOF	$60,000
472-UPPER CARIBOO R	HARVEY CREEK	RD,HR	15km,2ha	VH	H	M/L	VH	H	M/L	H	VH	H	EEV	MOF	$50,000
479-LITTLE RIVER	J ROAD	HR	1ha	VH	H	M/L	M/L	M/L	M/L	M/L	VH	H	EEV	MOF	$10,000
464c-NORTHARM	non-status	DAU	30	H	M/L	M/L	M/L	H	M/L	H	H	M/L	EEV	MOF	$25,000
464a-MID. QUESNEL R.	non-status	DAU	30	H	M/L	M/L	M/L	M/L	M/L	H	M/L	M/L	EEV	MOF	$25,000
464b-LIKELY	non-status	DAU	30	H	VH	H	H	H	M/L	H	H	M/L	EEV	MOF	$25,000

Table 9. EEV Roads spreadsheet for the Horsefly forest district

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining & Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	493 - John Boyd	600	Deactivation	RD, DF	NSR	35.904	H				H	M/L				EEV	FRBC	$107,712
Cottonwood	493 - John Boyd	3500	Deactivation	RD	NSR	42.364	H				M/L	M/L	VH			EEV	FRBC	$127,092
Cottonwood	490 - Little Swift	13L	Deactivation	RD	NSR	24.951	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	EEV	FRBC	$74,853
Willow	103 - Willow B	Ketcham Cr Julius Cr FSR Proj 7683.06	Deactivation	RSM	FSR	1.01	M/L	M/L	M/L	M/L	H	M/L	M/L		VH	EEV	MOF	$150,000
Willow	103 - Willow B	Ketcham Cr Willow R FSR Proj 7683.05	Deactivation	RSM	FSR	5.32	M/L	M/L	M/L	VH	VH	M/L	H		VH	EEV	MOF	$150,000

Appendix A. Contact and Support Personnel

Management Unit	Name	Affiliation
Cariboo Forest Region	Troy Larden	MELP Region
	Bruce McFarlane	MOF Region
	Mike Parker	MELP
	Jane Perry	RMP coordinator
Quesnel TSA	Ray Jungaro	MOF, Quesnel District
	Wayne Boudreau	Tolko
	Al Hunter	West Fraser
Williams Lake TSA	Karen Campbell	Weldwood
	James Moe	MOF, Horsefly District
	Dave Conly	Lignum
100 Mile House TSA	Paul Christensen	Ainsworth
	Peter Baggs	MOF, 100 Mile District
	Val Duffin	Weldwood

Appendix B. References Supporting EEV Component

None.

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 6
NON-STATUS ROAD DEACTIVATION AND REHABILITATION

September 30, 2000

TABLE OF CONTENTS

PART 6 NON STATUS ROAD DEACTIVATION AND REHABILITATION COMPONENT

6.1 Regional Summary of Deactivation and Rehabilitation Issues and Priorities Relating to Non-Status Roads 3
  6.1.1 Priority Setting 3
  6.1.2 Current Status of Funding for Managing Access on Non-Status Roads 4
6.2 Management Unit Issues and Priorities 4
6.3 Data Tables 4
  6.3.1 NSR Deactivation and Rehabilitation Spreadsheet Key 22
    Road Management Area 22
    Bucket Number 22
    Component Identifier 22
    Access Strategy 22
    Activity Codes 22
    Units 23
    Business Drivers 23
  Business Priority 24
  Program Priority 24
    Funding Program 24
    Proponent 24
    Funding Pressure 24

6.1 Regional Summary of Deactivation and Rehabilitation Issues and Priorities Relating to Non-Status Roads

There are a number of issues relating to management of non-status roads in the Cariboo Forest Region. One of the major drivers behind this RMP component is the change in focus under the Watershed Restoration Program (WRP), a key initiative funded by Forest Renewal BC (FRBC). Since this restructuring of focus by FRBC in late 1998, a number of deactivation benefits have been disassociated from WRP as a result of recent changes to an exclusive focus on fish, fish habitat and water quality. As a result, there are a large number of non-status roads that, although used by public and private interests, do not have a funding mechanism for access maintenance. While many of the implications directly relate to public safety and environmental values not covered by FRBC, there are also implications for access to other natural resources and the prosperity of resource sectors potentially using non-status roads. These include mining and mineral exploration, range use, tourism and recreation, and fire protection.

6.1.1 Priority Setting

Priorities for activities under the Non-status Road Deactivation and Rehabilitation component of this RMP have been estimated by two different methods. While each program has its own basis for priority setting, a number of other criteria are relevant to MOF's business priorities. The business priority for each activity (Table 1) is based on the risk of not completing the work and, in the interim, is derived from district knowledge of road use by various resource road users, such as mining, range, timber, and recreation. In time, standard definitions for each of these will be developed.

Risks and priorities for the business priority (Table 2) are designated as VH (very high), H (high) or M/L (medium/low). In comparison, the program priority is based on the criteria and processes that are unique to that program. For example, under the NSR Deactivation and Rehabilitation component of the RMP, the program priorities have been set according to the guidelines for that component as 1, 2 and 3. Priorities and funding requirements for non-status road activities, while neither comprehensive nor complete, are summarized for the Quesnel, Horsefly, and 100 Mile House districts in tables 6.1 and 6.2, since information was not received from the Williams Lake or Chilcotin forest districts prior to the submission deadline for this component of the RMP.

Table 1. Regional summary by program priority

District	Km. NSR	Ha. Landslide	Program Priority	Funding Pressure
Quesnel	73.6		1	$57,897
	628.4		2	$1,307,490
	1,083.7		3	$2,821,706
Horsefly	6		1	$260,000
	101		2	$990,000
	1062		3	$4,262,890
100 Mile House	61		1	$157,950
	50		2	$248,620
	21		3	$142,600

Table 2. Regional summary by business priority

District	Km. NSR	Ha. Landslide	Business Priority	Funding Pressure
Horsefly	418		VH	$1,875,060
	495		H	2,058,570
	59		M/L	$366,990
100 Mile House	29		VH	$82,120
	101		H	$382,050

6.1.2 Current Status of Funding for Managing Access on Non-Status Roads

Users of forest roads in the Cariboo Forest Region have a wide variety of interests in forest resources. To adequately manage road use on forest land, there is a need for funding to address not only road deactivation and closure, but also repair measures on existing non-status roads. While many of the activities required to maintain access for resource users are expected to be minimal, much of the potential expenditures for maintaining access on non-status roads are currently not funded by government. The NSR Deactivation and Rehabilitation component of the RMP is intended to identify roads and areas in need of work and provide the rationale for conducting the required work.

6.2 Management Unit Issues and Priorities

6.3 Data Tables

Tables 3, 4 and 5 present data for the Quesnel, Horsefly and 100 Mile Forest Districts, respectively.

Table 3 Quesnel Forest District

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	Ahbau	1000 rd	maintain	RSM	NSR	0.315	H				VH	M/L			1	NSR RD/R	MOF	$315
Cottonwood	493 - John Boyd	600	maintain	RSM	NSR	22.839	H				VH	M/L			1	NSR RD/R	MOF	$22,839
Cottonwood	493 - John Boyd	3500	maintain	RSM	NSR	8.65	H				VH	M/L			1	NSR RD/R	MOF	$8,650
Cottonwood	494 - Lightning	L13	leave alone	NAC	NSR	16.53	M/L	VH	H			M/L			1	NSR RD/R	MOF	$0
Cottonwood	494 - Lightning	13C	maintain	RSM	NSR	6.01	H	VH			VH	M/L			1	NSR RD/R	MOF	$6,010
Cottonwood	493 - Residual	500 road	maintain	RSM	NSR	1.073	H	VH			VH	M/L			1	NSR RD/R	MOF	$1,073
Willow	106 - Cresent	24C	maintain	RSM	NSR	6.01	H		VH	VH	VH	M/L	VH		1	NSR RD/R	MOF	$6,010
Willow	103 - Jack of Clubs	N/A	maintain	RSM	NSR	10.37	M/L		VH	VH	M/L	M/L			1	NSR RD/R	MOF	$10,370
Willow	106 - Sugar	2200	maintain	RSM	NSR	0.93	H		VH	VH	H	M/L			1	NSR RD/R	MOF	$930
Willow	106 - Sugar	2200	maintain	RSM	NSR	0.41	H		VH	VH	H	M/L			1	NSR RD/R	MOF	$410
Willow	106 - Sugar	2200	Deactivate	RD	NSR	0.43	H		VH	VH		M/L	VH		1	NSR RD/R	MOF	$1,290
Cottonwood	Ahbau	1000 rd	Deactivate	DF	NSR	3.944	H				H	M/L			2	NSR RD/R	MOF	$11,832
Cottonwood	Ahbau	1700 rd	Deactivate	DF	NSR	2.177	H				H	M/L			2	NSR RD/R	MOF	$6,531
Cottonwood	Ahbau	700 rd	Deactivate	DF	NSR	36.518	H				H	M/L			2	NSR RD/R	MOF	$109,554
Cottonwood	Ahbau	Highway 97	Deactivate	DF	NSR	11.923	H				H	M/L			2	NSR RD/R	MOF	$35,769
Cottonwood	493 - John Boyd	JB1	maintain	RSM	NSR	4.125	H				VH	M/L			2	NSR RD/R	MOF	$4,125
Cottonwood	493 - John Boyd	JB3	maintain	RSM	NSR	10.24	H				VH	M/L			2	NSR RD/R	MOF	$10,240
Cottonwood	493 - John Boyd	JB3	Deactivate	DF	NSR	9.281	H				H	M/L			2	NSR RD/R	MOF	$27,843
Cottonwood	494 - Lightning	5600	maintain	RSM	NSR	17.474	M/L				VH	M/L			2	NSR RD/R	MOF	$17,474
Cottonwood	494 - Lightning	5600	Deactivate	DF	NSR	3.691	M/L				H	M/L			2	NSR RD/R	MOF	$11,073

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	494 - Lightning	7200	maintain	RSM	NSR	7.918	M/L				VH	M/L			2	NSR RD/R	MOF	$7,918
Cottonwood	494 - Lightning	5600B	maintain	RSM	NSR	1.357	M/L				VH	M/L			2	NSR RD/R	MOF	$1,357
Cottonwood	494 - Lightning	7200A	Deactivate	DF	NSR	2.46	M/L				H	M/L			2	NSR RD/R	MOF	$7,380
Cottonwood	494 - Lightning	7200B	Deactivate	DF	NSR	2.524	M/L				H	M/L			2	NSR RD/R	MOF	$7,572
Cottonwood	494 - Lightning	72C	maintain	RSM	NSR	0.473	M/L				VH	M/L			2	NSR RD/R	MOF	$473
Cottonwood	494 - Lightning	C1	maintain	RSM	NSR	2	H				VH	M/L			2	NSR RD/R	MOF	$2,000
Cottonwood	494 - Lightning	JB1	maintain	RSM	NSR	4.5	H				VH	M/L			2	NSR RD/R	MOF	$4,500
Cottonwood	494 - Lightning	JB2	Deactivate	DF	NSR	0.63	H				H	M/L			2	NSR RD/R	MOF	$1,890
Cottonwood	494 - Lightning	JB3	maintain	RSM	NSR	1.861	H				VH	M/L			2	NSR RD/R	MOF	$1,861
Cottonwood	494 - Lightning	JB3	Deactivate	DF	NSR	1.072	H				H	M/L			2	NSR RD/R	MOF	$3,216
Cottonwood	494 - Lightning	L11	Deactivate	DF	NSR	2.587	M/L				H	M/L			2	NSR RD/R	MOF	$7,761
Cottonwood	494 - Lightning	L14	maintain	RSM	NSR	2.807	M/L				VH	M/L			2	NSR RD/R	MOF	$2,807
Cottonwood	494 - Lightning	1300	maintain	RSM	NSR	6.119	H				VH	M/L			2	NSR RD/R	MOF	$6,119
Cottonwood	494 - Lightning	1300	Deactivate	RD	NSR	7.225	H				H	M/L			2	NSR RD/R	MOF	$21,675
Cottonwood	494 - Lightning	13A	maintain	RSM	NSR	4.26	H				VH	M/L			2	NSR RD/R	MOF	$4,260
Cottonwood	494 - Lightning	13B	Deactivate	DF	NSR	5.69	H				H	M/L			2	NSR RD/R	MOF	$17,070
Cottonwood	494 - Lightning	13C	Deactivate	DF	NSR	0.88	H				H	M/L			2	NSR RD/R	MOF	$2,640
Cottonwood	490 - Little Swift	13F	maintain	RSM	NSR	1.483	H				VH	M/L			2	NSR RD/R	MOF	$1,483
Cottonwood	490 - Little Swift	13F	Deactivate	DF	NSR	8.582	H				H	M/L			2	NSR RD/R	MOF	$25,746
Cottonwood	490 - Little Swift	13L	maintain	RSM	NSR	20.284	H				VH	M/L			2	NSR RD/R	MOF	$20,284
Cottonwood	490 - Little Swift	13L	Deactivate	DF	NSR	10.126	H				H	M/L			2	NSR RD/R	MOF	$30,378
Cottonwood	483 - McMartin	1300	maintain	RSM	NSR	1.482	H				H	M/L			2	NSR RD/R	MOF	$1,482
Cottonwood	483 - McMartin	13S	maintain	RSM	NSR	0.757	H				VH	M/L			2	NSR RD/R	MOF	$757

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	483 - McMartin	13S	Deactivate	DF	NSR	9.4	H				H	M/L			2	NSR RD/R	MOF	$28,200
Cottonwood	488 - Reddish	1300	maintain	RSM	NSR	0.536	H				H	M/L			2	NSR RD/R	MOF	$536
Cottonwood	488 - Reddish	13K	maintain	RSM	NSR	26.8	M/L				VH	M/L			2	NSR RD/R	MOF	$26,800
Cottonwood	488 - Reddish	13K-b	maintain	RSM	NSR	2.75	M/L				VH	M/L			2	NSR RD/R	MOF	$2,750
Cottonwood	488 - Reddish	13K-b	Deactivate	DF	NSR	4.511	M/L				H	M/L			2	NSR RD/R	MOF	$13,533
Cottonwood	488 - Reddish	13N	maintain	RSM	NSR	9.43	H				VH	M/L			2	NSR RD/R	MOF	$9,430
Cottonwood	488 - Reddish	13N	Deactivate	DF	NSR	7.58	H				H	M/L			2	NSR RD/R	MOF	$22,740
Cottonwood	493 - Residual	1700 rd	maintain	RSM	NSR	7.888	H				VH	M/L			2	NSR RD/R	MOF	$7,888
Cottonwood	493 - Residual	300 road	Deactivate	DF	NSR	15.475	H				H	M/L			2	NSR RD/R	MOF	$46,425
Cottonwood	493 - Residual	CR13	Deactivate	DF	NSR	3.723	H				H	M/L			2	NSR RD/R	MOF	$11,169
Cottonwood	493 - Residual	CR19	Deactivate	DF	NSR	8.548	H				H	M/L			2	NSR RD/R	MOF	$25,644
Cottonwood	493 - Residual	CR6	Deactivate	DF	NSR	7.823	H				H	M/L			2	NSR RD/R	MOF	$23,469
Cottonwood	493 - Residual	Ten Mile Lake	Deactivate	DF	NSR	5.646	H				H	M/L			2	NSR RD/R	MOF	$16,938
Cottonwood	491 - Sovereign	1300	maintain	RSM	NSR	8.359	H				VH	M/L			2	NSR RD/R	MOF	$8,359
Cottonwood	491 - Sovereign	1300	Deactivate	DF	NSR	12.569	H				VH	M/L			2	NSR RD/R	MOF	$37,707
Cottonwood	491 - Sovereign	13A	maintain	RSM	NSR	8.415	H				VH	M/L			2	NSR RD/R	MOF	$8,415
Cottonwood	491 - Sovereign	13A	Deactivate	DF	NSR	18.88	H				H	M/L			2	NSR RD/R	MOF	$56,640
Cottonwood	491 - Sovereign	13C	maintain	RSM	NSR	4.5	H				VH	M/L			2	NSR RD/R	MOF	$4,500
Cottonwood	491 - Sovereign	13C	Deactivate	DF	NSR	5.68	H				H	M/L			2	NSR RD/R	MOF	$17,040
Cottonwood	491 - Sovereign	13D	maintain	RSM	NSR	3.873	H				VH	M/L			2	NSR RD/R	MOF	$3,873
Cottonwood	491 - Sovereign	13D	Deactivate	DF	NSR	1.65	H				H	M/L			2	NSR RD/R	MOF	$4,950
Cottonwood	483 - Swift River	3600	maintain	RSM	NSR	0.505	H				VH	M/L			2	NSR RD/R	MOF	$505
Cottonwood	483 - Swift River	3600	Deactivate	DF	NSR	6.026	H				H	M/L			2	NSR RD/R	MOF	$18,078

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	483 - Swift River	13A	maintain	RSM	NSR	0.315	H				VH	M/L			2	NSR RD/R	MOF	$315
Cottonwood	483 - Swift River	13A	Deactivate	DF	NSR	12.852	H				H	M/L			2	NSR RD/R	MOF	$38,556
Cottonwood	483 - Swift River	13N	maintain	RSM	NSR	1.9	H				VH	M/L			2	NSR RD/R	MOF	$1,900
Cottonwood	483 - Swift River	13-O	maintain	RSM	NSR	7.508	H				H	M/L			2	NSR RD/R	MOF	$7,508
Cottonwood	483 - Swift River	13-O	Deactivate	DF	NSR	10.882	H				H	M/L			2	NSR RD/R	MOF	$32,646
Cottonwood	483 - Swift River	300 road	maintain	RSM for mine access	NSR	10.132	H			VH		M/L			2	NSR RD/R	MOF	$10,132
Cottonwood	483 - Swift River	300 road	Deactivate	DF	NSR	36.54	H				H	M/L			2	NSR RD/R	MOF	$109,620
Cottonwood	483 - Swift River	300 road	Deactivate	DF / RD	NSR	5.5	H				H	M/L			2	NSR RD/R	MOF	$16,500
Cottonwood	483 - Swift River	5G	maintain	RSM	NSR	6.624	H				VH	M/L			2	NSR RD/R	MOF	$6,624
Cottonwood	483 - Swift River	5G	Deactivate	DF	NSR	11.324	H				H	M/L			2	NSR RD/R	MOF	$33,972
Cottonwood	496 - Umiti Creek	600	maintain	RSM	NSR	45.945	H				VH	M/L			2	NSR RD/R	MOF	$45,945
Cottonwood	478 - Victoria	2700	maintain	RSM	NSR	14.101	H				VH	M/L			2	NSR RD/R	MOF	$14,101
Cottonwood	478 - Victoria	3600	Deactivate	DF	NSR	6.245	H				H	M/L			2	NSR RD/R	MOF	$18,735
Cottonwood	478 - Victoria	4900	Deactivate	RD	NSR	20.139	H				H	M/L			2	NSR RD/R	MOF	$60,417
Cottonwood	478 - Victoria	300 road	maintain	RSM	NSR	2.16	H				VH	M/L			2	NSR RD/R	MOF	$2,160
Cottonwood	478 - Victoria	300 road	Deactivate	DF	NSR	15.442	H				H	M/L			2	NSR RD/R	MOF	$46,326
Cottonwood	478 - Victoria	M - road	maintain	RSM	NSR	0.95	H				VH	M/L			2	NSR RD/R	MOF	$950
Cottonwood	478 - Victoria	3600	Deactivate	DF	NSR	0.978	H				H	M/L			2	NSR RD/R	MOF	$2,934
Willow	106 - Big Valley	Black Rd	maintain	RSM	NSR	2.08	H				H	M/L			2	NSR RD/R	MOF	$2,080
Willow	106 - Big Valley	BR10D	Deactivate	DF	NSR	2.81	H				H	M/L			2	NSR RD/R	MOF	$8,430
Willow	103 - Pundata	N/A	maintain	RSM	NSR	1.07	H				H	M/L			2	NSR RD/R	MOF	$1,070
Willow	103 - Willow A	N/A	maintain	RSM	NSR	35.91	H				VH	M/L			2	NSR RD/R	MOF	$35,910
Cottonwood	Ahbau	1000 rd	Deactivate	RD	NSR	1.451	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$4,353

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	Ahbau	700 rd	maintain	RSM	NSR	7.823	H					M/L			3	NSR RD/R	MOF	$7,823
Cottonwood	Ahbau	700 rd	Deactivate	RD	NSR	51.185	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$153,555
Cottonwood	Ahbau	Genevieve	Deactivate	RD	NSR	22.304	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$66,912
Cottonwood	Ahbau	Genevieve	Deactivate	DF	NSR	39.272	M/L					M/L			3	NSR RD/R	MOF	$117,816
Cottonwood	Ahbau	Highway 97	Deactivate	RD	NSR	12.081	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$36,243
Cottonwood	493 - John Boyd	3500	Deactivate	DF	NSR	23.053	H					M/L			3	NSR RD/R	MOF	$69,159
Cottonwood	493 - John Boyd	JB1	Deactivate	RD	NSR	3.72	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$11,160
Cottonwood	493 - John Boyd	JB2	Deactivate	RD	NSR	1.25	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$3,750
Cottonwood	493 - John Boyd	JB3	Deactivate	RD	NSR	7.111	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$21,333
Cottonwood	494 - Lightning	2400	maintain	RSM	NSR	13.406	H				M/L	M/L			3	NSR RD/R	MOF	$13,406
Cottonwood	494 - Lightning	2400	Deactivate	RD	NSR	3.372	H					M/L			3	NSR RD/R	MOF	$10,116
Cottonwood	494 - Lightning	2400	Deactivate	DF	NSR	4.101	H					M/L			3	NSR RD/R	MOF	$12,303
Cottonwood	494 - Lightning	5600	Deactivate	RD	NSR	19.497	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$58,491
Cottonwood	494 - Lightning	7200	Deactivate	RD	NSR	4.355	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$13,065
Cottonwood	494 - Lightning	5600B	Deactivate	RD	NSR	4.51	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$13,530
Cottonwood	494 - Lightning	7200B	Deactivate	RD	NSR	0.684	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$2,052
Cottonwood	494 - Lightning	72C	Deactivate	RD	NSR	2.871	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$8,613
Cottonwood	494 - Lightning	JB1	Deactivate	RD	NSR	0.08	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$240
Cottonwood	494 - Lightning	JB3	Deactivate	RD	NSR	1.104	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$3,312
Cottonwood	494 - Lightning	L1	leave alone	NAC	NSR	1.798	M/L					M/L			3	NSR RD/R	MOF	$0
Cottonwood	494 - Lightning	L1	Deactivate	RD	NSR	0.126	M/L					M/L			3	NSR RD/R	MOF	$378
Cottonwood	494 - Lightning	L12	Deactivate	RD	NSR	0.315	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$945
Cottonwood	494 - Lightning	L19	Deactivate	RD	NSR	6.435	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$19,305
Cottonwood	494 - Lightning	L25	Deactivate	RD	NSR	4.669	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$14,007

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	494 - Lightning	L9	Deactivate	RD	NSR	1.672	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$5,016
Cottonwood	494 - Lightning	Ramos	Deactivate	RD	NSR	1.4	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$4,200
Cottonwood	494 - Lightning	13A	Deactivate	RD	NSR	3.965	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$11,895
Cottonwood	494 - Lightning	13C	Deactivate	RD	NSR	1.16	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$3,480
Cottonwood	490 - Little Swift	1300	Deactivate	RD	NSR	1.42	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$4,260
Cottonwood	490 - Little Swift	13F	Deactivate	RD	NSR	10.882	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$32,646
Cottonwood	483 - McMartin	1300	Deactivate	RD	NSR	4.921	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$14,763
Cottonwood	483 - McMartin	1300	Deactivate	DF	NSR	0.063	H					M/L			3	NSR RD/R	MOF	$189
Cottonwood	483 - McMartin	13S	Deactivate	RD	NSR	8.237	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$24,711
Cottonwood	488 - Reddish	1300	Deactivate	RD	NSR	8.36	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$25,080
Cottonwood	488 - Reddish	13K	Deactivate	RD	NSR	5.895	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$17,685
Cottonwood	488 - Reddish	13K-b	Deactivate	RD	NSR	4.605	M/L	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$13,815
Cottonwood	488 - Reddish	13N	Deactivate	RD	NSR	9.493	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$28,479
Cottonwood	493 - Residual	1700 rd	Deactivate	RD	NSR	6.561	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$19,683
Cottonwood	493 - Residual	300 road	Deactivate	RD	NSR	34.605	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$103,815
Cottonwood	493 - Residual	500 road	Deactivate	RD	NSR	4.731	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$14,193
Cottonwood	493 - Residual	CR15	Deactivate	RD	NSR	0.694	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$2,082
Cottonwood	493 - Residual	CR17	Deactivate	RD	NSR	15.741	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$47,223
Cottonwood	493 - Residual	CR17	Deactivate	DF	NSR	21.229	H					M/L			3	NSR RD/R	MOF	$63,687
Cottonwood	493 - Residual	CR19	Deactivate	RD	NSR	3.47	H					M/L			3	NSR RD/R	MOF	$10,410
Cottonwood	493 - Residual	CR2	Deactivate	DF	NSR	5.773	H					M/L			3	NSR RD/R	MOF	$17,319
Cottonwood	493 - Residual	CR3	Deactivate	RD	NSR	1.356	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$4,068
Cottonwood	493 - Residual	CR5	Deactivate	RD	NSR	0.347	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$1,041

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Cottonwood	493 - Residual	CR6	Deactivate	RD	NSR	4.133	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$12,399
Cottonwood	493 - Residual	CR8	Deactivate	RD	NSR	0.474	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$1,422
Cottonwood	493 - Residual	CR9	Deactivate	RD	NSR	18.581	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$55,743
Cottonwood	493 - Residual	Highway 97	Deactivate	RD	NSR	1.672	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$5,016
Cottonwood	493 - Residual	Ten Mile Lake	Deactivate	RD	NSR	20.66	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$61,980
Cottonwood	491 - Sovereign	1300	Deactivate	RD	NSR	19.305	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$57,915
Cottonwood	491 - Sovereign	13C	Deactivate	RD	NSR	6.43	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$19,290
Cottonwood	491 - Sovereign	13D	Deactivate	RD	NSR	12.109	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$36,327
Cottonwood	483 - Swift River	3600	Deactivate	RD	NSR	5.994	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$17,982
Cottonwood	483 - Swift River	13A	Deactivate	RD	NSR	18.994	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$56,982
Cottonwood	483 - Swift River	13N	Deactivate	RD	NSR	7.41	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$22,230
Cottonwood	483 - Swift River	13-O	Deactivate	RD	NSR	16.498	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$49,494
Cottonwood	483 - Swift River	300 road	maintain	RSM	NSR	1.3	H				M/L	M/L			3	NSR RD/R	MOF	$1,300
Cottonwood	483 - Swift River	300 road	Deactivate	RD	NSR	24.885	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$74,655
Cottonwood	483 - Swift River	5G	Deactivate	RD	NSR	0.158	H					M/L			3	NSR RD/R	MOF	$474
Cottonwood	496 - Umiti Creek	600	Deactivate	RD, DF	NSR	49.953	H					M/L			3	NSR RD/R	MOF	$149,859
Cottonwood	478 - Victoria	2700	Deactivate	RD	NSR	16.143	H					M/L			3	NSR RD/R	MOF	$48,429
Cottonwood	478 - Victoria	3600	Deactivate	RD	NSR	5.646	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$16,938
Cottonwood	478 - Victoria	4900	Deactivate	2WD	NSR	0.063	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$189
Cottonwood	478 - Victoria	300 road	Deactivate	RD	NSR	5.62	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$16,860
Cottonwood	478 - Victoria	M - road	Deactivate	RD	NSR	0.505	H	M/L	M/L	M/L	M/L	M/L	M/L	M/L	3	NSR RD/R	MOF	$1,515
Willow	106 - Big Valley	N/A	maintain	RSM	NSR	43.48	H					M/L			3	NSR RD/R	MOF	$43,480
Willow	106 - Big Valley	N/A	Deactivate	RD	NSR	52	H				M/L	M/L			3	NSR RD/R	MOF	$156,000

Road Management Area	Bucket Number	Component Identifier	Access Strategy	Activity	Road Type	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. bucket)	(eg. 6000 Road)	(eg. maintain)	(eg. RD)	(eg. NSR)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
									Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Willow	106 - Cresent	N/A	maintain	RSM	NSR	15.26	H				M/L	M/L			3	NSR RD/R	MOF	$15,260
Willow	106 - Cresent	N/A	Deactivate	RD	NSR	18.29	H				M/L	M/L			3	NSR RD/R	MOF	$54,870
Willow	103 - Jack of Clubs	N/A	Deactivate	RD	NSR	6.84	M/L				M/L	M/L			3	NSR RD/R	MOF	$20,520
Willow	103 - Rebman	N/A	maintain	RSM	NSR	3.7	H				M/L	M/L			3	NSR RD/R	MOF	$3,700
Willow	103 - Rebman	N/A	Deactivate	RD	NSR	30.53	H				M/L	M/L			3	NSR RD/R	MOF	$91,590
Willow	103 - Slough	N/A	maintain	RSM	NSR	18.54	H				M/L	M/L			3	NSR RD/R	MOF	$18,540
Willow	103 - Slough	N/A	maintain	RSM	NSR	1.86	H				M/L	M/L			3	NSR RD/R	MOF	$1,860
Willow	103 - Slough	N/A	Deactivate	RD	NSR	2.65	H				M/L	M/L			3	NSR RD/R	MOF	$7,950
Willow	106 - Sugar	N/A	maintain	RSM	NSR	20.66	H				M/L	M/L			3	NSR RD/R	MOF	$20,660
Willow	106 - Sugar	N/A	Deactivate	RD	NSR	1.51	H				M/L	M/L			3	NSR RD/R	MOF	$4,530
Willow	102 - Tregillus	N/A	maintain	RSM	NSR	75	H				M/L	M/L			3	NSR RD/R	MOF	$75,000
Willow	102 - Tregillus	N/A	Deactivate	RD	NSR	12.63	H				M/L	M/L			3	NSR RD/R	MOF	$37,890
Willow	103 - Williams	N/A	maintain	RSM	NSR	2.32	M/L				M/L	M/L			3	NSR RD/R	MOF	$2,320
Willow	103 - Willow A	900D	maintain	RSM	NSR	3.17	H				M/L	M/L			3	NSR RD/R	MOF	$3,170
Willow	103 - Willow A	N/A	Deactivate	RD	NSR	125.55	H				M/L	M/L			3	NSR RD/R	MOF	$376,650
Willow	103 - Willow A	N/A	Deactivate	DF	NSR	3.94	H				M/L	M/L			3	NSR RD/R	MOF	$11,820
Willow	103 - Willow A	N/A	Deactivate	RD	NSR	8.11	H				M/L	M/L			3	NSR RD/R	MOF	$24,330
Willow	103 - Willow B	241	Deactivate	RD	NSR	1.31	M/L				M/L	M/L			3	NSR RD/R	MOF	$3,930
Willow	103 - Yuzkli	N/A	maintain	RSM	NSR	5.43	M/L				M/L	M/L			3	NSR RD/R	MOF	$5,430
Cottonwood	494 - Lightning	Ramos	Deactivate	DF	NSR	1.2	M/L				H	M/L			3	NSR RD/R	MOF	$3,600
Totals						**1785.657**												**$4,187,093**

Table 4. Horsefly Forest District

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
7	Horsefly River	various	MOF	hr	1	$50,000	1	Infrastructure public safety
470	Seller	various	MOF	hr	1	$10,000	1	Public safety
5	Quesnel River	various	MOF	hr	1	$50,000	1	Infrastructure public safety
6	Quesnel Lake	various	MOF	hr	1	$50,000	1	Infrastructure public safety
6	Quesnel Lake	various	MOF	hr	1	$50,000	1	Infrastructure public safety
4	Cariboo River	various	MOF	hr	1	$50,000	1	Infrastructure public safety
7	Horsefly River	various	MOF	hr	1	$50,000	1	Infrastructure public safety
472	Upper Cariboo River	various	MOF	hr	2	$100,000	2	Environment
470	Seller	various	MOF	hr	1	$10,000	2	Infrastructure environment
5	Quesnel River	various	MOF	rd	30	$300,000	2	Infrastructure environment
5	Quesnel River	various	MOF	rd	30	$90,000	2	Environment
6	Quesnel Lake	various	MOF	hr	2	$100,000	2	Infrastructure environment
6	Quesnel Lake	various	MOF	rd	30	$90,000	2	Environment
6	Quesnel Lake	various	MOF	hr	2	$100,000	2	Infrastructure environment
4	Cariboo River	various	MOF	hr	2	$100,000	2	Infrastructure environment
454	Spokin	394, 396-398, 401	MOF	hr	2	$100,000	2	Infrastructure environment
454	Spokin	211-215, 217	MOF	rr,rd	1.7	$510	3	Environment plantation
454	Spokin	222-232	MOF	rr,rd	5.5	$1,650	3	Environment plantation
454	Spokin	466-474	MOF	rr,rd	7.4	$2,220	3	Environment plantation
454	Spokin	596, 715-717	MOF	rr,rd	3.7	$1,110	3	Environment plantation
456	Beaver Valley	350-355	MOF	rr,rd	1.8	$540	3	Plantation
456	Beaver Valley	126, 127	MOF	rr,rd	6.7	$2,010	3	Plantation environment
449	Bells Lake	356, 357	MOF	rd	6.9	$2,070	3	Environment
456	Beaver Valley	157-161, 463, 464	MOF	rr	1.3	$390	3	Plantation
456	Beaver Valley	162-163	MOF	rd, rr	7.1	$2,130	3	Environment plantation
456	Beaver Valley	664, 665	MOF	rr	1	$300	3	Plantation
454	Spokin	569-571, 574, 575, 535	MOF	rr	1.5	$450	3	Plantation
451	Woodjam	542, 543, 548	MOF	rd,rr	4.5	$1,350	3	Environment plantation
454	Spokin	405, 407-414, 522	MOF	rr	1.1	$330	3	Plantation
454	Spokin	353, 356, 357, 517-522	MOF	rd,rr	5.1	$1,530	3	Environment plantation
456	Beaver Valley	537, 576	MOF	rd,rr	5.7	$1,710	3	Environment plantation
454	Spokin	395-398, 401-403, 583, 553	MOF	rr	1.4	$420	3	Plantation
448	Moffat	139-143	MOF	rd,rr	8.4	$2,520	3	Environment plantation
452	Tisdall	76-83	MOF	rd	11.7	$3,510	3	Environment
452	Tisdall	369-374, 379, 382	MOF	rd,rr	6.7	$20,100	3	Environment plantation
445	McKinley	452-454-460	MOF	rr	3	$9,000	3	Plantation
452	Tisdall	507, 510	MOF	rd,rr	7.8	$23,400	3	Environment plantation
445	McKinley	290-300	MOF	rr	4	$12,000	3	Plantation
445	McKinley	333-347	MOF	rd,rr	5.9	$17,700	3	Environment plantation
445	McKinley	486, 487, 476, 477	MOF	rd,rr	19.7	$59,100	3	Environment plantation
			MOF	rd	4.7	$14,100	3	Plantation environment

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
447	Molybdenite	505, 506	MOF	rr	1.2	$3,600	3	Plantation
445	McKinley	524	MOF	rd	1.7	$5,100	3	Environment
445	McKinley	770, 771, 577, 578, 089	MOF	rd,rr	10.6	$31,800	3	Environment plantation
455	Upper Horsefly River	270-272, 358-362	MOF	rd,rr	10.3	$103,000	3	Environment plantation
455	Upper Horsefly River	489-491	MOF	rr	1.1	$11,000	3	Plantation
453	Horsefly Mainstem	339, 488, 492-504	MOF	rd,rr	23.7	$7,110	3	Plantation environment
455	Upper Horsefly River	86, 87, 90, 91	MOF	rr	9	$90,000	3	Environment plantation
450	McKuskey	144-148	MOF	rd,rr	8.1	$81,000	3	Environment plantation
455	Upper Horsefly River	233-246	MOF	rd,r	13.6	$136,000	3	Environment plantation
455	Upper Horsefly River	383, 384	MOF	rd	3.7	$37,000	3	Environment
455	Upper Horsefly River	386, 387	MOF	rr,rd	3	$30,000	3	Environment plantation
455	Upper Horsefly River	440-443	MOF	rr,rd	3.4	$34,000	3	Environment plantation
455	Upper Horsefly River	284, 285	MOF	rr	0.5	$5,000	3	Plantation
455	Upper Horsefly River	092, 094-111	MOF	rd,rr	37	$370,000	3	Environment plantation
455	Upper Horsefly River	200-202, 321, 389, 482	MOF	rd,rr	14.7	$147,000	3	Environment plantation
455	Upper Horsefly River	613, 614	MOF	rd,rr	2.1	$21,000	3	Environment plantation
455	Upper Horsefly River	171-173	MOF	rd	4.6	$46,000	3	Environment plantation
455	Upper Horsefly River	363-367, 465	MOF	rr,rd	3.6	$36,000	3	Environment plantation
464R	Bill Miner	203-206, 209, 210, 247, 348-349	MOF	rd,rr	14	$140,000	3	Environment plantation
464R	Bill Miner	120-125, 150-155, 183, 185-190	MOF	rd,rr	30.7	$307,000	3	Environment plantation
455	Upper Horsefly River	288, 323-325	MOF	rd,rr	5.7	$57,000	3	Environment plantation
455	Upper Horsefly River	523, 198-199	MOF	rd,rr	3.3	$33,000	3	Environment plantation
464R	Bill Miner	250, 251	MOF	rd	3	$30,000	3	Environment
458	Horsefly Lake	390, 449-450, 465	MOF	rd,rr	3.2	$960	3	Environment plantation
464R	Bill Miner	207, 208, 248, 249, 266-268, 277-280	MOF	rd,rr	8	$80,000	3	Environment plantation
464R	Bill Miner	286, 287, 301-309, 319, 320, 433-435	MOF	rd,rr	18.4	$184,000	3	Environment plantation
464R	Bill Miner	437, 438, 531, 532, 598	MOF	rr	2.4	$24,000	3	Plantation
464b	Likely	446-448, 536	MOF	rd,rr	3.1	$930	3	Plantation environment
465	Hen Ingram	457-462, 483, 484	MOF	rd,rr	5.4	$1,620	3	Plantation environment
472a	Lower Cariboo River	069-075	MOF	rd,rr	8.9	$2,670	3	Plantation environment
472a	Lower Cariboo River	261-264, 733	MOF	rr	2.9	$870	3	Plantation
480	Keithley	028-030, 036, 047, 040, 048-055	MOF	rd,rr	3	$30,000	3	Plantation environment
480	Keithley	002-006, 009-027, 031-035, 059	MOF	rd,rr	36.2	$362,000	3	Plantation environment
480	Keithley	062, 063, 066-068, 070	MOF	rd,rr	5.3	$53,000	3	Plantation environment
7	Horsefly River	various	MOF	rd,rr	30	$90,000	3	Environment
468	Spanish	3-5	MOF	rd,rr	2.8	$28,000	3	Environment
468	Spanish	7	MOF	rd	1.8	$18,000	3	Environment
468	Spanish	10	MOF	rd	1	$10,000	3	Environment
468	Spanish	14-23	MOF	rd,rr	7.1	$71,000	3	Plantation environment
464b	Likely	25-32	MOF	rd,rr	3.7	$1,110	3	Plantation
445	McKinley	35, 36	MOF	rd	1.2	$3,600	3	Plantation
447	Molybdenite	39-57	MOF	rd,rr	21	$63,000	3	Plantation environment

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
469	Grain	58-65	MOF	rd,rr	16.7	$167,000	3	Plantation environment
458	Horsefly Lake	93	MOF	rd	2.6	$780	3	Environment
445	McKinley	101-106	MOF	rd,rr	8.8	$26,400	3	Plantation environment
472	Upper Cariboo River	108-112	MOF	rd,rr	3	$30,000	3	Plantation environment
485	Cameron	113	MOF	rd	2.1	$6,300	3	Environment
466	Buxton	114, 115	MOF	rd,rr	3.4	$1,020	3	Environment plantation
469	Grain	122	MOF	rd	1.4	$14,000	3	Environment
445	McKinley	135	MOF	rd	2.3	$6,900	3	Environment
468	Spanish	142	MOF	rr	0.2	$2,000	3	Plantation
445	McKinley	166-176	MOF	rd,rr	4.5	$13,500	3	Plantation environment
470	Seller	179	MOF	Rd	1.7	$17,000	3	
485	Cameron	181-183	MOF	rd	1.2	$3,600	3	Plantation
466	Buxton	188-192	MOF	rr	1.5	$450	3	Plantation
472	Upper Cariboo River	193-195	MOF	rd,rr	2.8	$28,000	3	Plantation environment
456a	Beaver Valley	196-203	MOF	rr	4.9	$1,470	3	Plantation environment
445	McKinley	205	MOF	rr	0.7	$2,100	3	Plantation
445	McKinley	206-210	MOF	rd,rr	4.8	$14,400	3	Environment plantation
469	Grain	217-219	MOF	rd,rr	3.6	$36,000	3	Environment plantation
445	McKinley	222	MOF	rd	1.2	$3,600	3	Environment
445	McKinley	224-226	MOF	rd,rr	1.9	$5,700	3	Plantation environment
445	McKinley	228-232	MOF	rd,rr	2.1	$6,300	3	Plantation environment
472	Upper Cariboo River	233, 234	MOF	rr	1.4	$14,000	3	Plantation
468	Spanish	257	MOF	rd	6.8	$68,000	3	Environment
445	McKinley	262-267	MOF	rd,rr	3.7	$11,100	3	Plantation environment
445	McKinley	268-271	MOF	rr	1	$3,000	3	Plantation
445	McKinley	272, 273	MOF	rr	0.8	$2,400	3	Plantation
447	Molybdenite	277-279	MOF	rr	0.6	$1,800	3	Plantation
479	Little River	285-293	MOF	rr	3.1	$9,300	3	Plantation
468	Spanish	312-318	MOF	rd,rr	3.9	$39,000	3	Plantation environment
468	Spanish	321, 324	MOF	rd	4.6	$46,000	3	Environment
469	Grain	327, 328	MOF	rr	1.7	$17,000	3	Plantation
445	McKinley	329-331	MOF	rr	1.1	$3,300	3	Plantation
465	Hen Ingram	340-341	MOF	rr	0.9	$270	3	Plantation
456a	Beaver Valley	348-354	MOF	rr	4.5	$1,350	3	Plantation
456a	Beaver Valley	356	MOF	rd	1.4	$420	3	Environment
445	McKinley	367-369	MOF	rr	0.8	$2,400	3	Plantation
458	Horsefly Lake	374, 377, 379	MOF	rr	1.3	$390	3	Plantation
468	Spanish	380-385	MOF	rd,rr	5.7	$57,000	3	Plantation environment
445	McKinley	451-453	MOF	rr	1.5	$4,500	3	Plantation
456a	Beaver Valley	460, 461	MOF	rr	0.9	$270	3	Plantation
456a	Beaver Valley	507, 462-464	MOF	rd,rr	2.7	$810	3	Plantation environment
468	Spanish	510, 511	MOF	rr	1.2	$12,000	3	Plantation

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
466	Buxton	549, 550	MOF	rr	1	$300	3	Plantation
466	Buxton	556-562	MOF	rd,rr	7.2	$2,160	3	Plantation environment
468	Spanish	627, 628	MOF	rr	0.9	$9,000	3	Plantation
464c	North Arm	119, 120	MOF	rd	0.3	$900	3	Plantation
464c	North Arm	118	MOF	rd	0.2	$600	3	Plantation
464c	North Arm	117	MOF	rd	0.2	$600	3	Plantation
464c	North Arm	116	MOF	rd	0.2	$600	3	Plantation
464c	North Arm	23	MOF	rd	3.4	$10,200	3	Environment plantation
464c	North Arm	24	MOF	rd	0.7	$2,100	3	Plantation
464c	North Arm	70-75	MOF	rd	7.1	$21,300	3	Environment plantation
465	Hen Ingram	65-69	MOF	rd	4	$1,200	3	Environment plantation
465	Hen Ingram	020, 021	MOF	rd	1.6	$480	3	Environment
464W	East Arm	38-45	MOF	rd	7.4	$22,200	3	Environment plantation
464W	East Arm	32	MOF	rd	3	$9,000	3	Environment
464W	East Arm	51-55	MOF	rd	4.6	$13,800	3	Environment plantation
464W	East Arm	97-102	MOF	rd	4.9	$14,700	3	Environment plantation
464W	East Arm	015, 016	MOF	rd	8.5	$25,500	3	Environment
464W	East Arm	089-096	MOF	rd	3.8	$11,400	3	Plantation
464W	East Arm	17	MOF	rd	5	$15,000	3	Environment
464W	East Arm	049, 050	MOF	rd	3.1	$9,300	3	Environment
464c	North Arm	14	MOF	rd	1.7	$5,100	3	Environment
464c	North Arm	046, 047	MOF	rd	1.2	$3,600	3	Plantation
464c	North Arm	202	MOF	rd	2.2	$6,600	3	Environment
464c	North Arm	189, 190	MOF	rd	1.5	$4,500	3	Environment
464c	North Arm	009, 010	MOF	rd	2	$6,000	3	Environment
464c	North Arm	008, 200	MOF	rd	3.6	$10,800	3	Environment
464c	North Arm	007, 197	MOF	rd	2.2	$6,600	3	Environment
464c	North Arm	194-196	MOF	rd	2	$6,000	3	Plantation environment
464c	North Arm	006, 193	MOF	rd	2.2	$6,600	3	Environment plantation
464c	North Arm	005, 191, 192	MOF	rd	2.3	$6,900	3	Environment plantation
464c	North Arm	034-037	MOF	rd	5.4	$16,200	3	Environment plantation
464c	North Arm	201	MOF	rd	1.6	$4,800	3	Environment
464c	North Arm	31	MOF	rd	1.7	$5,100	3	Environment
464c	North Arm	056-059	MOF	rd	4.7	$14,100	3	Environment
6	Quesnel Lake	various	MOF	rd,rr	30	$90,000	3	Environment
451	Woodjam	086-091	MOF	rd	5.3	$1,590	3	Plantation environment
451	Woodjam	095-100	MOF	rd	3.1	$930	3	Plantation environment
276	Squawk	051-058	MOF	rd	10.1	$3,030	3	Plantation environment
276	Squawk	065-076	MOF	rd	13.2	$3,960	3	Plantation environment
448	Moffat	078-081	MOF	rd	3.6	$1,080	3	Plantation environment
448	Moffat	082-084	MOF	rd	1.7	$510	3	Plantation environment
448	Moffat	038-042	MOF	rd	4.9	$1,470	3	Plantation environment

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
448	Moffat	030-037	MOF	rd	9	$2,700	3	Plantation environment
448	Moffat	43	MOF	rd	1.4	$420	3	Plantation environment
448	Moffat	045-050	MOF	rd	4.5	$1,350	3	Plantation environment
448	Moffat	001-010	MOF	rd	9.5	$2,850	3	Plantation environment
448	Moffat	016-024	MOF	rd	17.4	$5,220	3	Plantation environment
477	Rollie	001-003	MOF	rd	14.3	$42,900	3	Environment
4	Cariboo River	various	MOF	rd,rr	30	$90,000	3	Environment
453	Horsefly Mainstem	r08107	MOF	rd	10	$3,000	3	Environment
453	Horsefly Mainstem	r07079	MOF	rd	10	$3,000	3	Environment
456a	Beaver Valley	7	MOF	rd	1.6	$480	3	Environment
456a	Beaver Valley	8	MOF	rd	0.4	$120	3	Plantation
456a	Beaver Valley	31	MOF	rd	0.6	$180	3	Plantation
456a	Beaver Valley	012-016	MOF	rd	3.9	$1,170	3	Environment
460	Gavin Lake	34	MOF	rd	1.2	$360	3	Environment
460	Gavin Lake	020-023	MOF	rd	6.6	$1,980	3	Environment
460	Gavin Lake	027-029	MOF	rd	2.5	$750	3	Plantation environment
460	Gavin Lake	31	MOF	rd	0.6	$180	3	Plantation
460	Gavin Lake	33	MOF	rd	3	$900	3	Environment
456a	Beaver Valley	various	MOF	rd,rr	10	$3,000	3	Environment
460	Gavin Lake	various	MOF	rd,rr	10	$3,000	3	Environment
463	Edney	various	MOF	rd,rr	5	$1,500	3	Plantation environment
451	Woodjam	66, 67, 70-72	MOF	rr,rd	2.2	$660	3	Plantation Environment
448	Moffat	235-239	MOF	rr,rd	3.6	$1,080	3	Plantation Environment
448	Moffat	124, 410	MOF	rr,rd	1.5	$450	3	Plantation Environment
451	Woodjam	240-243	MOF	rr,rd	2.8	$840	3	Plantation Environment
451	Woodjam	344, 345, 346	MOF	rr,rd	3.5	$1,050	3	Plantation Environment
448	Moffat	83-88	MOF	rr,rd	6.5	$1,950	3	Plantation Environment
448	Moffat	73-81	MOF	rr,rd	7	$2,100	3	Plantation Environment
448	Moffat	128, 129, 131, 132	MOF	rr,rd	2	$600	3	Plantation Environment
448	Moffat	139-141, 213-215	MOF	rr,rd	4.4	$1,320	3	Plantation Environment
447	Molybdenite	335, 336, 260, 261, 416-420	MOF	rr,rd	6.2	$18,600	3	Plantation Environment
448	Moffat	398-401	MOF	rr,rd	1.5	$450	3	Plantation Environment
448	Moffat	297-303	MOF	rr,rd	5.8	$1,740	3	Plantation Environment
448	Moffat	438, 442-444	MOF	rr,rd	3.2	$960	3	Plantation Environment
458	Horsefly Lake	375, 376, 392	MOF	rr,rd	6	$1,800	3	Plantation Environment
448	Moffat	145-147, 148-153	MOF	rr,rd	5.7	$1,710	3	Plantation Environment
451	Woodjam	244-245, 163-165	MOF	rr,rd	2.7	$810	3	Plantation Environment
542	Tisdall	413, 414	MOF	rr,rd	1	$3,000	3	Plantation Environment
445	McKinley	337-338	MOF	rr,rd	3.2	$9,600	3	Plantation Environment
448	Moffat	246-249	MOF	rr,rd	1.5	$450	3	Plantation Environment
448	Moffat	154-162	MOF	rr,rd	3.5	$1,050	3	Plantation Environment
458	Horsefly Lake	91, 94-99, 454-459	MOF	rr,rd	28.5	$8,550	3	Plantation Environment

Watershed Number	Name	Project Name	Proponent	Activity	Units	Cost	Priority	Benefit
485	Cameron	113, 180, 184-186	MOF	rr,rd	5.3	$15,900	3	Plantation Environment

Table 5. 100 Mile House Forest District

Road Management Area Name	Bucket Number	Component Identifier	Access Strategy	Activity	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. Bucket No.)	(eg. 6000 Road)	(eg. Maintain)	(eg. RD)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
								Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Lang Lake	371a	F-3-20	Deactivate	RD	4.7	VH	H	M/L	M/L	VH	M/L	VH	VH	2	NSR RD/R	MOF	$14,220
Lang Lake	371a	F-2-9	Deactivate	RD	3.6	VH	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$10,000
Lang Lake	371a	F-3-36	Deactivate	RD	1.0	M/L	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$5,000
Lang Lake	371a	F-3-30	Deactivate	RD	2.4	M/L	H	VH	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$7,000
Lang Lake	371a	Succour	Deactivate	RD	6.5	VH	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$19,500
Peach Creek	374	Ole Lake	Deactivate	RD	7.0	H	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$35,000
Peach Creek	374	Ole Lake	Deactivate	RD	9.1	M/L	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$27,500
Peach Creek	374	C-1-9-3	Deactivate	RD	2.3	H	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$6,900
Coffee Creek	378	E-2-4	Deactivate	RD	1.7	M/L	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$6,000
Coffee Creek	378	E-1-4-6	Deactivate	RD	1.5	M/L	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$6,500
Coffee Creek	378	C-2-25	Deactivate	RD	1.0	M/L	H	M/L	M/L	VH	M/L	H	H	2	NSR RD/R	MOF	$5,000
Upper Br Cr	357a	H7000b (Site 1A)	Deactivate	RR	2.5	VH	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$6,250
Upper Br Cr	357a	S1010a (Site 1B)	Deactivate	RR	4.2	VH	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$10,500
Upper Br Cr	357a	S1010 (Site 1C)	Deactivate	RR	2.3	VH	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$5,750
Upper Br Cr	357a	S1000d (Site 1D)	Deactivate	RR	0.7	VH	H	VH	M/L	VH	M/L	H	H	1	NSR RD/R	MOF	$1,750
Upper Br Cr	357a	S2042c (Site 1F)	Deactivate	RD	0.2	VH	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$500
Upper Br Cr	357a	S2042e (Site 1G)	Deactivate	RR	2.5	VH	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$6,250
Upper Br Cr	357a	S2043a (Site 1H)	Deactivate	RR	1.5	VH	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$3,750
Upper Br Cr	357a	S8040d (Site 2C)	Deactivate	RR	0.2	VH	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$500
Upper Br Cr	357a	S-20421	Maintain	STRM	1.7	VH	VH	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$5,100
Upper Br Cr	357a	S-2043c	Maintain	STRM	3.8	VH	VH	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$11,400
Upper Br Cr	357a	S-2043k1	Maintain	STRM	0.8	VH	VH	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$2,400

Road Management Area Name	Bucket Number	Component Identifier	Access Strategy	Activity	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. Bucket No.)	(eg. 6000 Road)	(eg. Maintain)	(eg. RD)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
								Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Scott Creek	91	18-45-1 (Site 1B)	Deactivate	RR	1.6	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$4,000
Scott Creek	91	18-45 (Site 1C)	Deactivate	RR	2.5	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$6,250
Scott Creek	91	18-47-1(Site 1D)	Deactivate	RD	0.8	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$2,000
Scott Creek	91	18-55 (Site 1E)	Deactivate	RR	1.6	VH	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$4,000
Upper Bonaparte	77a	18-66-2 (Site 1G)	Deactivate	RD	2.1	VH	H	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$5,250
Upper Bonaparte	77a	18-67 (Site 1H)	Deactivate	RR	4.6	VH	H	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$11,500
Upper Bonaparte	77a	18-62 (Site 1I)	Deactivate	RD	0.3	VH	H	VH	M/L	VH	M/L	M/L	VH	1	NSR RD/R	MOF	$750
Upper Bonaparte	77a	18-59 (Site 1J)	Deactivate	RD	1.1	VH	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$2,750
Upper Bonaparte	77a	18-23 (Site 1K)	Deactivate	RR	1.6	VH	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$4,000
Upper Bonaparte	77a	18-82 (Site 2A)	Deactivate	RR	1.4	H	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$3,500
Upper Bonaparte	77a	17-10-3 (Site 3A)	Deactivate	RR	1.6	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$4,000
Upper Bonaparte	77a	17-10-1 (Site 3B)	Deactivate	RD	1.7	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$4,250
Upper Bonaparte	77a	18-15 (Site 3C)	Deactivate	RR	4.5	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$11,250
Upper Bonaparte	77a	18-20-1 (Site 3D)	Deactivate	RR	0.9	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$2,250
Upper Bonaparte	77a	19-12 (Site 3F)	Deactivate	RD	2.0	H	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$5,000
Upper Bonaparte	77a	17-7-18 (Site 3H)	Deactivate	RR	0.8	M/L	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$2,000
Upper Bonaparte	77a	17-7-6 (Site 3I)	Deactivate	RR	2.0	M/L	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$5,000
Upper Bonaparte	77a	17-7-7 (Site 3J)	Deactivate	RR	2.2	M/L	H	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$5,500
Brown Creek	95	18-75 (Site 2B)	Deactivate	RR	0.9	H	H	VH	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$2,250
Rayfield River	93	7-48	Maintain	BREPLAC	1.8	H	VH	M/L	M/L	VH	M/L	H	H	3	NSR RD/R	MOF	$85,000
Rayfield River	93	7-48-1	Deactivate	RD	2.1	M/L	M/L	M/L	M/L	VH	M/L	M/L	H	1	NSR RD/R	MOF	$6,300
Rayfield River	93	18-4	Deactivate	RD	6.2	VH	H	M/L	M/L	VH	M/L	H	H	3	NSR RD/R	MOF	$18,600
Rayfield River	93	18-4-2	Deactivate	RD	2.9	VH	H	M/L	M/L	VH	M/L	H	H	3	NSR RD/R	MOF	$8,700
Rayfield River	93	7-32	Deactivate	RD	3.1	VH	M/L	M/L	M/L	M/L	M/L	H	H	3	NSR RD/R	MOF	$9,300
Rayfield River	93	7-32-13	Deactivate	RD	4.0	VH	M/L	M/L	M/L	M/L	M/L	M/L	H	1	NSR RD/R	MOF	$12,000

Road Management Area Name	Bucket Number	Component Identifier	Access Strategy	Activity	Quantity: km or ha	Business Drivers							Business Priority	Program Priority	Program	Potential Proponent	Funding Pressure
(eg. Watershed Name)	(eg. Bucket No.)	(eg. 6000 Road)	(eg. Maintain)	(eg. RD)	(default km)	CCLUP Access Targets	Public Use	Provincial Revenue									
								Tourism/ Resorts	Mining and Mineral Exploration	Timber	Range/ Ranching	Fishery					
Rayfield River	93	7-32-14	Deactivate	RD	1.5	VH	M/L	M/L	M/L	M/L	M/L	H	H	3	NSR RD/R	MOF	$4,500
Rayfield River	93	7-38	Deactivate	RD	5.5	VH	H	VH	M/L	VH	M/L	H	VH	3	NSR RD/R	MOF	$16,500
Rayfield River	93	7-38-1	Deactivate	RD	1.4	VH	H	VH	M/L	VH	M/L	H	VH	2	NSR RD/R	MOF	$4,200
Rayfield River	93	7-38-2	Deactivate	RD	3.6	VH	H	VH	M/L	VH	M/L	H	VH	2	NSR RD/R	MOF	$10,800
Lac des Roches	354	Birch Lake	Deactivate	STRM	2.0	H	VH	VH	M/L	M/L	M/L	M/L	H	2	NSR RD/R	MOF	$6,000
	SUB-TOTALS				129.5												
																	$464,170
Various Road Management Areas		Various Roads		DM/DL/ RD					Program to prevent sediment from entering streams from road ditch drainage (DFO and MELP regulations/direction)								$100,000
	TOTAL																
																	$564,170

6.3.1 NSR Deactivation and Rehabilitation Spreadsheet Key

Road Management Area
This column identifies a land unit, which organizes the row information by watershed on an interim basis. In this way, the required outputs for EEV are easily transferred. Planning under EEV currently references core buckets by name and number, so both could be inserted here.

Bucket Number
This column identifies the land unit by bucket number(s). Several bucket numbers may comprise a watershed.

Component Identifier
This column identifies the road segment, system, or network. This is typically the number or name of a road, although in the case of landslides, a unique identifier may be necessary.

Access Strategy
This column identifies the access strategy for each road as upgrade, maintain, deactivate, or rehabilitate. These can be used in conjunction with the activity codes to determine non-standard codes, which are primarily set by the RMP component guidelines.

Activity Codes
This column reflects a code that relates to some activity. Under EEV, FRBC codes include HR (hillslope rehabilitation) or RD (road deactivation). In the case of the NSR Road Deactivation and Rehabilitation component of the RMP, there is also an RR (road repair) designation that conflicts with RR (road rehabilitation). Therefore, the standard for these road codes has been extracted from the Forest Road Management System pilot for consistency. Codes are shown in Table 6.

Table 6. Activity Codes

Activity Code	Expanded Meaning	Activity Code	Expanded Meaning
GATE	Gate	DJ	Outslope road
CLS	Close	DK	Inslope road
RST	Restrict	DL	Install / repair erosion protection
NEW	Construction	DM	Install / repair sediment basins
RAC	Reactivation	DN	Revegetate
REL	Relocation	DO	Pull back sidecast
WID	Widening	MB	Carry out brushing
BREPAIR	Bridge Repair	MC	Remove snags and danger trees
BREPLACE	Bridge Replacement	MD	Clean ditches
RSM	Routine Surface Maintenance	ME	Clean culvert inlets and outlets
STRM	Structural Maintenance	MF	Grade surface
CC	Stabilize slopes	MG	Stabilize subgrade
CD	Rectify hazards	MH	Replace planks, delineators, etc.
DA	Install or repair cross-ditches	MI	Replace or repair cattleguard
DD	Remove cross-drains / stream culverts	MJ	Replace signs
DE	Clean or repair cross-drain / stream culverts	MK	Replace Culvert

Activity Code	Expanded Meaning	Activity Code	Expanded Meaning
DF	Back up cross-drain / stream culverts	NAC	No Action
DG	Clean ditches	HR	Hillside restoration
DH	Repair / replace bridges	LRU	Landing recontouring
DI	Remove bridges	RD	Road Deactivation
		RR	Road recontouring
		RT	Riparian Rehabilitation

Units

This column is simply the quantity of road, hill slope, or site relating to the activity. The default for units is kilometers (km) of road.

Business Drivers

Three different criteria are used to assess the risk of not funding the specified activity in relation to both legislation and government function. Combining these criteria – CCLUP, Public use, and Provincial revenue generators - describe the business drivers that rationalize the undertaking of work by the Ministry of Forests.

CCLUP Access Targets

Maintenance of access to various percentages of land units (polygons) has been identified in the Cariboo-Chilcotin Land-Use Plan. Since this is plan has been legislated as a higher level plan under FPC, there is a need for funding to meet maintenance requirements. This column in the spreadsheet is meant to reflect the risk of not maintaining access for the various resource users as described in the 90 day implementation report if funding is not provided.

Public Use

This column represents an indirect measure of risk to the government that potentially arises from public exposure and liability. The rating applies to the aggregate use of the watershed by the public in addition to any resource uses not exclusively classified as industrial. Public use includes hunting, fishing, trapping, First Nations interests, recreation, wildcraft, range, and guide outfitters.

Provincial Revenue Generators

The criteria falling under this category characterize the risk of lost revenue to the province if the work is not undertaken. In general, the risk relates the revenue foregone to the cost of doing the work. That is, if the work is not done there is a high risk that the province will forego income that exceeds the cost of the work, say $10,000 for example, in lost royalties (eg. stumpage), direct taxes, export taxes, and taxes on goods and services. Although this measure call for some quantification, the risk rating are relatively qualified based on the best information currently available.

Tourism/Resorts

This column provides an estimate of the risk to provincial revenue that comes from Tourism. In the Cariboo region, the presence of resorts may help approximate more or less risk.

Mining and Mineral Exploration
Local knowledge of historical resource use of the land unit for this category is used to estimate the risk to provincial revenue foregone as a result of road failure.

Timber
This column provides an estimate of the risk to provincial revenue that relates to reduced reliability on fire protection, Standing Timber Inventory, timber access, wood manufacturing, silviculture, and other timber uses.

Range/Ranching
This column represents the risk to provincial revenue that comes from range use or ranching, including provincial income from permitting, taxes on animal sales, or expenditures on fencing.

Fishery
This column provides a relative estimate of risk to provincial income that is related to a sport and/or commercial fishery. This is one of the more difficult items to estimate because it is not in our business expertise.

Business Priority
This column is a visual average or approximation of the aggregate risk to ministry business, based on the identified business drivers.

Program Priority
This column represents the program priority that is assigned uniquely to each of the funding programs. For example, the priorities for the NSR deactivation and rehabilitation are based on 1, 2, and 3, which correspond to VH, H, and M/L. Some systems will have a larger number of rating levels than others, 4 compared to 3, so this needs to be flexible.

Funding Program
This column identifies how the different activities are grouped, such that the activities are considered for funding under each respective program's priorities.

Proponent
This column is an indication of which entity, government or private, would likely be a proponent with which funds for the work could be negotiated, based on the user pays principle. For example, if mining interests wish to maintain 4x4 access on a road, then there is a need to negotiate responsibility for funding that activity.

Funding Pressure
This column is simply an estimate of the cost to complete the work under any given activity, without reference to time.

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN

2001/2002

PART 7
FOREST SERVICE ROAD MANAGEMENT PROGRAM

September 30, 2000

TABLE OF CONTENTS

PART 7 FOREST SERVICE ROAD MANAGEMENT PROGRAM

7.1 Forest Service Roads Regional Issues and Priorities 3
7.2 Management Unit FSR Issues and Priorities 3
7.3 FSR Data Template 3
  Quesnel Foresrt District 9
  Williams Lake Forest District 13
  Horsefly Forest District 17
  100 Mile House Forest district 22
  Chilcotin Forest District 29

7.1 Forest Service Roads Regional Issues and Priorities

The Cariboo Forest Region continues to maintain a network of roads exceeding 4300 km in length and over 200 large culverts and bridges.

The primary focus of road maintenance activities is to provide safe access and to protect the structural integrity of the road prism. Maintenance activities include inspections, grading, brushing, repair to surface and subsurface materials, subgrade repair, signage and snowplowing when required.

Whenever possible, Forest Service Road maintenance obligations are transferred to the forest licensees under Road Permits and Road Use Permits. On Forest Service roads where there is a long-term suspension of harvesting or forest obligations have been met, the Forest Service maintains or deactivates the roads as necessary.

This component of the Resource Management Plan outlines the road maintenance priorities and funding requirements on forest service roads. Funding priorities are often driven by the high public demand for maintained road access along our main roads to private property, school bus routes, parks, mines, ranches, traditional use areas and recreational areas, to name a few.

Road access is vital to the ranching and mining communities found throughout the Cariboo Forest Region. This has been addressed through the higher level plans such ad the Cariboo Chilcotin Land Use Plan that provides objectives for a high degree of access to most areas of the region. Sub-regional plans and local access plans are underway in several areas to address local access requirements. The demand for access is continually heard during public presentations and deactivation meetings held with the public.

The Ministry of Forests has worked hard to replace many of the older log stringer bridges on the main roads over the last 15 years. Most log stringer structures have been replaced and emphasis has been shifting to address blocked fish passage whenever possible. There are 11 stream crossing structures identified for replacement in 2001/2002 and several smaller culverts to be increased in size to allow fish passage. Stream crossing measures have increased dramatically over the last few years and now comprise a significant portion of the replacement costs.

7.2 Management Unit FSR Issues and Priorities

The tables shown in section 7.3 are intended to follow the provincial guidelines and priorities outlined in the resource management plan guides. Throughout the next several months, these priorities will be reviewed in light of the continued forest health issues, bark beetle salvage harvesting and other regional priorities and projects may have to be amended.

7.3 FSR Data Template

The following tables show the funding requirements for the Forest Service Road Management Program in the Cariboo Forest Region based on the provincial template. A second table shows individual forest district requirements. The road register for each district is also shown that indicates the Forest Service roads, users who are responsible for maintenance activities, and the work that has been identified. Also, they provide a quick reference showing other users and demands on the road. These sheets are used annually to update maintenance requirements and can be used to project the following years maintenance requirements.

RESOURCE MANAGEMENT PLAN - ENGINEERING PROGRAM

FOR YEAR 2001/2002

CARIBOO FOREST REGION

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS		ESTIMATED COSTS			TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
					BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $				
Fixed Costs (region $):												
Right-of-way acquisition	*40802*	H	NO.		0	0	0		0			
emergency repairs	*40803*	H	NO.		115000	115000	0		115000			
inspection of bridges/major culverts	*40804*	H	NO.		25000	140000	0		25000			
railway crossing maint.	*40805*	H	NO.	1	3500	143500	0		3500			
subtotal					143500		0		143500			
Surface Maintenance + Non Modification Repairs	*40805*	H	KM	362	94500	238000	0	0	94500			
		M	KM	858	87500	325500		0	87500			
(e.g., grading, brushing, cross drain culvert repairs, ditch cleanout, bridge deck cleaning and repair, road surfacing)		L	KM	810	92900	418400		0	92900			
subtotal					274900		0		274900			
Modification-Bridge and Major Culvert Replacement	*40806*	H	NO.	7	515000	933400	0	0	515000			
	or	M	NO.	4	104000	1037400		0	104000			
(needs road layout and design)	*40812*	L	NO.	0	0	1037400		0	0			
subtotal					619000		0		619000			
Modification-Other Works	*40807*	H	NO.	35	202000	1239400	0	0	202000			
(needs road layout and design)		M	NO.	8	270000	1509400		0	270000			
(e.g., road relocation, stream culvert replacement, road stability repair)		L	NO.	0	0	1509400		0	0			
subtotal					472000		0		472000			

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS		ESTIMATED COSTS			TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
					BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $				
Road Deactivation	*40808*	H	KM	19	76000	76000	0	0	76000			
		M	KM	0	8000	84000		0	8000			
		L	KM	0	0	84000		0	0			
subtotal					84000		0		84000			
TOTAL					1593400		0		1593400			

Forest Service Road & Bridge Components

Forest District Activities--Engineering Program

FOR YEAR 2001/2002
Cariboo Forest Region

ACTIVITY	ACCOUNT	PRIORITY													
			Region	Quesnel		Williams Lake		Horsefly		100 Mile		Chilcotin		Regional Requirements	
Fixed Costs (region $):			$	$	Goals	$	Goals	$	Goals	$	Goals	$	Goals		
Right-of-way acquisition	40802	H												0	0
emergency repairs	40803	H		30000		10000		35000		20000		20000		115000	0
inspection of bridges/major culverts	40804	H	25000											25000	0
railway crossing maint.	40805	H								3500	1			3500	0
Surface Maintenance	40805	H	35000			25500	70	14000	290			20000	2	94500	362
		M		45000	490	3500	10	12000	180	27000	178			87500	858
(e.g., grading, brushing, ditch cleanout, bridge deck cleaning and repair)		L		17000	470	30900	115	25000	110	20000	115			92900	810
Modification-Bridge and Major Culvert Replacement	40806	H		155000	3	300000	3			60000	1			515000	7
		M										104000	4	104000	4
		L												0	0
Modification-Other Works	40807	H	25000					45000	3			132000	32	202000	35
		M						35000	2	195000	6	40000		270000	8
(e.g., road relocation, stream culvert replacement, road stability repair)		L												0	0

ACTIVITY	ACCOUNT	PRIORITY													
			Region	Quesnel		Williams Lake		Horsefly		100 Mile		Chilcotin		Regional Requirements	
Road Deactivation	*40808*	H M L	15000	50000	2			0		0		11000 8000	17	76000 8000 0	19 0
TOTAL			$ 100,000	$ 297,000		$ 369,900		$ 166,000		$ 325,500		$ 335,000		$ 1,593,400	

Quesnel Foresrt District

Project #	Forest Service Road	road register	Length actual	Under permit	Priority	Risk	Residences	Commercial Use	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
									First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
7678.01	CUNNINGHAM PASS F.S.R.	59	59	59	M	M	3	1	0	2	5	1	0	2	59	0	y	np	10000	y	Licencee Vacating		
5823.04	TZENZAICUT - WEIER F.S.R.	30.1	30.1	30.1	H	H	1	1	0	5	0	1	0	0	30.1	0	y	np	150000	y	Log culvert Replacement		
4017.	MILBURN MTN. L/O & REP. SITE	8.6	8.6	0	L	L	0	0	0	0	0	0	0	0	8.6	0	n	np	2000	n	np=none planned		
5464.03	NYLAND LAKE - SUNBERG F.S.R.	27	27	6	L	L	1	1	0	1	2	1	0	0	27	0	y	np	n/a	y	SB Built		
5464.04	NYLAND LAKE - FORKS CREEK F.S.R.	2.1	2.1	0	L	L	0	0	0	0	2	0	0	0	2.1	0	y	np	1000	n	SB Built		
5464.05	NYLAND LAKE - MAUDE CREEK F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	2	0	y	np	1000	n	SB Built		
5823.08	TZENZAICUT - NARCOSLI SOUTH F.S.R.	9.5	9.5	9.5	L	L	1	1	0	2	0	0	0	0	9.5	0	y	np	2500	y	SB Built		
5823.09	TZENZAICUT - RAMSEY EAST F.S.R.	5.5	5.5		L	L	0	0	0	1	0	0	0	0	5.5	0	y	np	2000	n	SB Built		
5823.10	TZENZAICUT - SOUTH RAMSEY F.S.R.	10.5	10.5	6	L	L	1	1	0	1	0	0	0	0	10.5	0	y	np	4000	y	SB Built		
7672.15	MICHELLE - MORRIS F.S.R.	12.5	12.5	0	L	L	0	0	0	0	0	0	0	0	12.5	0	n	np	n/a	n	SB Built	P	98/99
7674.02	SWEDE CREEK - MARCEL F.S.R.	3	3	0	L	L	0	0	0	0	0	0	0	0	3	0	n	np	500	n	SB Built		
7683.03	KETCHAM CR. - YUZKLI F.S.R	9.6	9.6	0	L	L	0	0	0	1	0	0	0	0	9.6	0	y	np	3000	n	SB Built		
7683.04	KETCHUM CR. - YUZKLI - EAST F.S.R.	2.6	2.6	0	L	L	0	0	0	0	0	0	0	0	2.6	0	y	np	2500	n	SB Built		
7683.07	KETCHAM CREEK - YUZKLI CREEK F.S.R.	2.1	2.1	0	L	L	0	0	0	0	0	0	0	0	2.1	0	y	np	500	n	SB Built		
7683.08	KETCHAM CR-YUZKLI CR-BIG FIR F.S.R.	0.9	0.9	0	L	L	0	0	0	0	0	0	0	0	0.9	0	y	np	500	n	SB Built		
7744.02	JAMES MOUNTAIN - ALIX CREEK F.S.R.	9.6	9.6	9.6	L	L	0	0	0	6	1	0	0	0	9.6	0	y	np	500	n	SB Built		
7744.05	JAMES MOUNTAIN - AUSTRALIAN CR FSR	1.4	1.4	0	L	L	0	0	0	5	0	0	0	0	1.4	0	y	np	500	n	SB Built		
7744.06	JAMES MOUNTAIN- ALIX CR. NORTH	3.4	3.4	3.4	L	L	0	0	0	5	0	0	0	0	3.4	0	y	np	n/a	n	SB Built		
8285.01	CLISBAKO MOUTH F.S.R.	10.9	10.9	0	L	L	0	0	0	0	0	0	0	0	10.9	0	y	np	2000	y	SB Built		
8285.02	CLISBAKO MOUTH - SOUTH F.S.R.	1.1	1.1	0	L	L	0	0	0	0	0	0	0	0	1.1	0	n	np	n/a	n	SB Built	P	99/2000
8285.03	CLISBAKO MOUTH - BROWN F.S.R.	19.2	19.2	0	L	L	0	0	0	0	0	0	0	0	19.2	0	y	np	4000	n	SB Built		
8285.04	CLISBAKO MOUTH - EAST F.S.R.	8.7	8.7	0	L	L	0	0	0	0	0	0	0	0	8.7	0	y	np	2000	n	SB Built		

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
8374.01	BROWN CREEK F.S.R.	10.1	10.1	0	L	L	0	0	0	2	0	0	0	0	10.1	0	y	np	4000	n	SB Built		
8858.01	CHARLESON CREEK F.S.R.	13	13	8	L	L	1	1	0	2	2	0	0	0	13	0	y	np	2500	y	SB Built		
9351.01	TIBBLES NORTH F.S.R.	9.9	9.9	0	L	L	0	0	0	0	0	0	0	0	9.9	0	y	np	5000	n	SB Built		
5073.08	SWIFT - MCMARTIN F.S.R.	2.9	2.9	0	M	M	0	0	0	1	2	0	0	0	2.9	0	y	np	2000	n	SB Built		
5073.09	SWIFT RIVER - MERIDAN CREEK F.S.R.	4.1	4.1	0	M	M	0	0	0	1	0	0	0	0	4.1	0	y	np	3000	y	SB Built		
5073.10	SWIFT RIVER - MERIDIAN SOUTH F.S.R.	3.2	3.2	0	M	M	0	0	0	0	0	0	0	0	3.2	0	y	np	2000	y	SB Built		
5073.12	SWIFT - BREAKNECK RIDGE F.S.R.	3.6	3.6	0	M	M	0	0	0	0	1	0	0	0	3.6	0	y	np	1000	n	SB Built		
5073.13	SWIFT - RABBIT CREEK F.S.R.	2.2	2.2	2.2	M	M	0	0	0	1	0	0	0	0	2.2	0	y	np	2000	n	SB Built		
5073.14	SWIFT - RABBIT CREEK SOUTH F.S.R.	0.6	0.6	0.6	M	M	0	0	0	0	0	0	0	0	0.6	0	y	np	1000	n	SB Built		
7678.04	CUNNINGHAM - NOLAKA CREEK F.S.R.	9.8	9.8	9.8	M	M	0	0	0	1	0	0	0	0	9.8	0	y	np	10000	y	SB Built		
7678.05	CUNNINGHAM - LOSTWAY CREEK F.S.R.	4.6	4.6	0	M	M	0	0	0	1	0	0	0	0	4.6	0	y	np	5000	n	SB Built		
7678.06	CUNNINGHAM - LOSTWAY SOUTH F.S.R.	1.9	1.9	0	M	M	0	0	0	1	0	0	0	0	1.9	0	y	np	2000	n	SB Built		
7678.07	CUNNINGHAM - SIXBEE F.S.R.	1.7	1.7	0	M	M	0	0	0	0	0	0	0	0	1.7	0	y	np	1000	n	SB Built		
7683.05	KETCHAM CREEK - WILLOW RIVER F.S.R.	5	5	0	M	M	0	0	0	1	1	0	0	0	5	0	y	np	1000	y	SB Built	P	00/01
7683.06	KETCHAM CREEK - JULIUS CREEK F.S.R.	1.5	1.5	0	M	M	0	0	0	1	0	0	0	0	1.5	0	y	np	1000	n	SB Built	P	99/2000
8370.01	NAZKO FALLS F.S.R.	15	15	1	M	M	0	0	0	2	0	0	0	1	15	0	y	np	6000	y	SB Built		
8801.01	JACK OF CLUBS F.S.R.	5	5	0	M	M	0	0	0	1	2	0	0	0	5	0	y	np	4500	y	SB Built		
8844.01	LIGHTNING CREEK F.S.R.	3.8	3.8	0	M	M	1	1	0	1	3	0	0	0	3.8	0	y	np	3800	y	SB Built		
9936.01	HILL LAKE F.S.R.	8.5	8.5	8.5	M	M	0	0	0	3	0	0	0	0	8.5	0	y	np	8500	n	SB Built		
5073.11	SWIFT RIVER - MERIDIAN MOUNTIAN FSR	6.8	6.5	0	M	M	0	0	0	0	0	0	0	0	6.8	0	y	np	2000	n	SB Built - Deact 300m	P	
5823.02	TZENZAICUT - RAMSEY F.S.R.	19.8	19.8	19.8	L	L	3	0	0	5	0	1	0	0	19.8	0	y	np	4000	y	Snow Plowing		
4795.01	JORDAN CREEK - GOOSE LAKE F.S.R.	6	6	6	L	L	0	0	0	1	0	0	0	0	6	0	y	np	n/a	n			
5299.	FISHPOT LOOKOUT & ACCESS	4.8	4.8	0	L	L	0	0	0	0	0	0	0	0	4.8	0	n	np	500	n			
5411.	TWO SISTERS LOOKOUT & ACCESS	6	6	0	L	L	0	0	0	1	0	0	0	0	6	0	n	np	500	n		SP	94/95
5431.06	NAVER CREEK - REBMAN F.S.R.	4.3	4.3	0	L	L	0	0	0	1	0	0	0	0	4.3	0	y	np	n/a	n			

Project #	Forest Service Road	Length			Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
5464.01	NYLAND LAKE F.S.R.	37.8	37.8	30	L	L	2	1	0	3	2	2	0	0	37.8	0	y	np	7000	n			
5464.02	NYLAND LAKE - BIRREL F.S.R.	4.5	4.5	4.5	L	L	0	0	0	0	2	0	0	0	4.5	0	y	np	2000	n			
5823.01	TZENZAICUT LAKE F.S.R.	52.5	52.5	45	L	L	3	1	0	5	0	2	0	0	52.5	0	y	np	7000	n			
5823.03	TZENZAICUT - GARNER F.S.R.	30	30	30	L	L	5	1	0	4	0	2	0	0	30	0	y	np	1000	y			
5823.06	TZENZAICUT - NARCOSLI F.S.R.	22	22	13	L	L	0	0	0	2	1	0	0	0	22	0	y	np	5000	y			
5823.07	TZENZAICUT - NARCOSLI WEST F.S.R.	12	12	12	L	L	0	0	0	1	0	0	0	0	12	0	y	np	n/a	y			
6398.02	KEITHLEY CREEK - CRAZE CREEK F.S.R.	1.8	1.8	0	L	L	0	1	0	0	1	0	0	0	1.8	0	y	np	1000	n			
7525.01	RAM LOOKOUT AND ACCESS	4.5	4.5	0	L	L	0	0	0	1	0	0	0	0	4.5	0	y	np	n/a	n		SP	94/95
7525.02	RAM ACCESS	2.2	2.2	0	L	L	0	0	0	1	0	0	0	0	2.2	0	n	np	n/a	n			
7622.01	TIBBLE CREEK F.S.R.	9.8	9.8	9.8	L	L	0	0	0	1	0	0	0	0	9.8	0	n	np	n/a	y			
7672.02	MICHELLE - MARMOT F.S.R.	6	6	6	L	L	0	0	0	2	0	0	0	0	6	0	y	np	n/a	n			
7672.04	MICHELLE - McFARLAND F.S.R.	13	13	0	L	L	0	0	0	2	0	0	0	0	13	0	y	np	3000	n			
7672.05	MICHELLE - TOIL F.S.R.	13.4	13.4	0	L	L	0	0	0	2	0	0	0	0	13.4	0	y	np	3000	y			
7672.07	MICHELLE - CANYON MOUNTAIN F.S.R.	22	22	0	L	L	0	0	0	2	0	0	0	0	22	0	y	np	5000	n			
7672.08	MICHELLE - FISHPOT F.S.R.	9.7	9.7	0	L	L	0	0	0	1	0	0	0	0	9.7	0	y	np	500	y			
7672.09	MICHELLE - CANYON MTN. WEST F.S.R.	19	19	0	L	L	0	0	0	2	0	0	0	0	19	0	y	np	5000	n			
7672.11	MICHELLE - LITTLE MTN. F.S.R.	7.4	7.4	0	L	L	0	0	0	2	0	0	0	0	7.4	0	y	np	4000	y			
7672.12	MICHELLE - FIRE F.S.R.	8	8	0	L	L	0	0	0	2	0	0	0	0	8	0	y	np	500	y			
7672.13	MICHELLE - KLUSKUS F.S.R.	4.9	4.9	0	L	L	0	0	0	2	0	0	0	0	4.9	0	y	np	500	n			
7672.14	MICHELLE-CANYON-MAXWELL CR. F.S.R.	8.1	8.1	0	L	L	0	0	0	2	0	0	0	0	8.1	0	y	np	500	n			
7674.01	SWEDE CREEK F.S.R.	16.9	16.9	16.9	L	L	0	0	0	3	0	1	0	0	16.9	0	y	np	n/a	y			
7744.01	JAMES MOUNTAIN - LOOKOUT F.S.R.	14.6	14.6	14.6	L	L	0	0	0	4	0	0	0	0	14.6	0	y	np	n/a	n			
7853.01	UDY CREEK F.S.R.	11.5	11.5	11.5	L	L	0	1	0	3	0	0	0	0	11.5	0	y	np	n/a	y			
8238.01	PETERS CREEK F.S.R.	3.1	3.1	3.1	L	L	0	0	0	1	1	0	0	0	3.1	0	y	np	n/a	y			
8258.01	TINGLEY CREEK F.S.R.	9.3	9.3	4	L	L	0	0	0	1	0	0	0	0	9.3	0	y	np	1000	n			
8350.01	TAUTRI CREEK F.S.R.	13.9	13.9	0	L	L	1	0	0	2	0	1	0	0	13.9	0	y	np	5000	n			
8350.02	TAUTRI CREEK - SOUTH F.S.R.	1.1	1.1	0	L	L	1	0	0	2	0	0	0	0	1.1	0	y	np	n/a	n			
8350.03	TAUTRI CREEK - WENTWORTH F.S.R.	13.9	13.9	13.9	L	L	0	0	0	3	0	1	0	0	13.9	0	y	np	n/a	n			

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
8481.01	UPPER UDY F.S.R.	13.1	13.1	13.1	L	L	0	0	0	2	0	0	0	0	13.1	0	y	np	n/a	y			
8609.01	REDWATER F.S.R.	14.7	14.7	14.7	L	L	0	0	0	1	0	0	0	0	14.7	0	y	np	n/a	y			
8609.02	REDWATER - F.S.R.	2	2	0	L	L	0	0	0	1	0	0	0	0	2	0	y	np	500	n			
9171.01	NORTH BAEZAEKO F.S.R.	11.8	11.8	11.8	L	L	0	0	0	2	0	0	0	0	11.8	0	y	np	n/a	n			
9433.01	LANDSLIDE F.S.R.	12.9	12.9	0	L	M	1	0	0	1	0	0	0	1	12.9	0	y	np	2000	y			
5073.01	SWIFT RIVER F.S.R.	50	50	48	M	M	3	0	0	2	10	1	0	0	50	2500	y	np	1000	y			
5073.02	SWIFT - ATIS F.S.R.	5.3	5.3	0	M	M	1	1	0	1	4	0	0	0	5.3	0	y	np	n/a	n			
5073.03	SWIFT - BENDIXON F.S.R	5.5	5.5	0	M	M	0	0	0	1	4	0	0	0	5.5	0	y	np	n/a	n			
5073.04	SWIFT - LITTLE SWIFT F.S.R.	6.5	6.5	6.5	M	M	0	0	0	2	3	0	0	0	6.5	0	y	np	n/a	n			
5073.05	SWIFT RIVER - NORTH F.S.R.	5.9	5.9	0	M	M	0	0	0	1	2	0	0	0	5.9	0	y	np	n/a	n			
5073.06	SWIFT - PORTER F.S.R.	4.8	4.8	0	M	M	0	0	0	1	2	0	0	0	4.8	0	y	np	n/a	y			
5073.07	SWIFT - SOVEREIGN F.S.R.	4	4	4	M	M	0	0	0	1	4	0	0	0	4	0	y	np	n/a	y			
5431.03	NAVER CREEK - BIG VALLEY F.S.R.	19.8	19.8	0	M	M	0	0	0	1	2	0	0	0	19.8	0	y	np	8000	y			
6398.01	KEITHLEY CREEK - BARKERVILLE F.S.R.	12	12	0	M	M	1	3	0	1	4	1	0	0	12	0	y	np	2000	y			
7624.01	NORTON CREEK F.S.R.	36.5	36.5	5	M	M	2	2	0	2	3	0	0	0	36.5	0	y	np	n/a	y			
7624.02	NORTON CREEK - TREGILLUS F.S.R.	16.9	16.9	16.9	M	M	1	2	0	2	3	0	0	0	16.9	0	y	np	n/a	y			
7672.01	MICHELLE - BAEZAEKO F.S.R.	90	90	10	M	L	30	0	100	6	1	2	0	1	90	0	y	np	8000	y			
7672.03	MICHELLE - COGLISTIKO F.S.R.	30.1	30.1	0	M	M	30	0	100	1	1	1	0	0	30.1	0	y	np	10000	y			
7678.02	CUNNINGHAM - MATTHEW F.S.R.	24.7	24.7	0	M	M	0	0	0	1	0	0	0	1	24.7	0	y	np	5000	y			
7678.03	CUNNINGHAM - BABCOCK F.S.R.	30.5	30.5	0	M	M	0	0	0	2	3	0	0	0	30.5	0	y	np	5000	y			
7683.01	KETCHAM CREEK F.S.R.	80.8	80.8	30	M	M	2	0	0	3	4	1	0	0	80.8	0	y	np	5000	y			
7683.02	KETCHAM CREEK - BIG VALLEY F.S.R.	18.5	18.5	0	M	M	0	0	0	1	2	0	0	0	18.5	0	y	np	1000	y			
7863.01	KRUGER LAKE F.S.R.	16	16	0	M	M	1	1	0	1	0	0	0	0	16	0	y	np	5000	y			
7984.01	SNAKING RIVER F.S.R.	23.5	23.5	23.5	M	M	2	2	0	2	0	1	0	0	23.5	0	y	np	n/a	y			
9852.01	HALLIS LAKE F.S.R.	2.6	2.6	0	M	L	0	1	0	0	1	1	0	0	2.6	0	y	np	500	n			
			483.9																50500				
7672.06	MICHELLE - BALDFACE F.S.R.			0	N/A	N/A	0	0	0		0	0	0	0		0	n/a	np	n/a	n			
8258.02	TINGLEY CREEK - SOUTH F.S.R.			0	N/A	N/A	0	0	0	0	0	0	0	0		0	n/a	np	n/a	n			
																			364800				

Williams Lake Forest District

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register (km)	actual (km)	Under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	First Nations (#)	Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (km)	dust control ($)	culvert replace (y/n)	other	cost/yr	(y/n)		Type (SP or P)	Cost
3181.01	DE SOUS MOUNTAIN LOOKOUT F.S.R.	5	5	0	L	L	0	0	0	0	0	0	0	0	5	$0	N		$1,000	N	Lookout access		
5145.01	SMOKEY MOUNTAIN L/O F.S.R.	6	6	4	H	L	0	3	0	2	0	1	0	0	2	$0	N		$8,000		Lookout access		
5145.02	SMOKEY MOUNTAIN F.S.R.	10	8	8	L	L	0	3	0	2	0	0	0	0	2	$0	N		$0	N	Comm. Gravel pits/Hydro		
5265.02	ALEX GRAHAM - PALMER LAKE F.S.R.	21	21	21	L	L	0	5	2	10	0	2	0	0	0	$0	N		$0	N			
5265.04	ALEX GRAHAM - ROSS LAKE F.S.R.	15	15	15	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N			
5265.06	ALEX GRAHAM - JUNCTION F.S.R.	4	4	4	L	L	0	5	2	10	0	2	0	0	0	$0	N		$0	N			
5265.08	ALEX GRAHAM - HANCE FSR	4	4	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
5265.09	ALEX GRAHAM - STROUSE FSR	4.2	4.2	0	L	L	0	0	0	0	0	0	0	0	4.2	$0	N		$1,500	N			
6416.01	GASPARD CREEK F.S.R.	22.5	22.5	22.5	L	L	10	5	2	10	1	1	0	1	0	$0	Y		$100,000	Y	2200 Rd-Culvert Replacement, Wales Creek @ 2237.5Km-Bridge		
6416.02	GASPARD CREEK - CHURN CREEK F.S.R.	68	68	68	L	M	5	3	3	5	1	1	0	1	0	$0	N		$0	Y	2800 Rd		
6416.03	GASPARD CREEK - BIG CREEK F.S.R.	11.7	11.7	11.7	L	L	1	1	0	2	0	0	0	0	0	$0	Y		$100,000	Y	2900 Rd-Culvert Replacement, Wales Creek @ .2 Km-Bridge		
6416.04	GASPARD CREEK - MONS CREEK F.S.R.	36	36	36	L	M	1	2	0	2	0	0	0	1	0	$0	N		$0	Y	2400 Rd		
6416.05	GASPARD CR. - W. CHURN CREEK F.S.R.	16	16	16	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	3200 Rd		
6416.06	GASPARD CREEK - WALES CREEK F.S.R.	14.5	14.5	14.5	L	M	0	2	0	1	0	0	0	0	0	$0	N		$0	N	2200A Rd		
6416.07	GASPARD CREEK - RED MOUNTAIN F.S.R.	18	18	18	L	M	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	Red Mtn. Road		
6416.08	GASPARD CREEK - EIGHT F.S.R.	9	9	9	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N	2818 Rd		
6416.09	GASPARD CREEK - NINE F.S.R.	2	2	0	H	L	0	0	0	0	0	0	0	0	2	$0	N		$1,500	N			
6416.10	GASPARD CREEK - TEN F.S.R.	0.6	0.6	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.11	GASPARD CREEK - ELEVEN F.S.R.	1.7	1.7	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.12	GASPARD CREEK - TWELVE F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.13	GASPARD - THIRTEEN F.S.R.	3.3	3.3	3.3	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
6416.14	GASPARD - FOURTEEN F.S.R.	0.78	0.78	0.78	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			

Project #	Forest Service Road	road register	Length		Priority	Risk	Residences	Commercial Use	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
			actual	Under permit					First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
6416.15	GASPARD CREEK - EAST CHURN F.S.R.	15	15	15	L	M	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	UNDER CONSTRUCTION		
6416.20	GASPARD CREEK - DASH F.S.R.	7	7	7	M	M	0	0	0	0	0	0	0	0	7	$0	N		$3,000	Y	UNDER CONSTRUCTION		
6426.02	ROSITA - MACKIN CREEK F.S.R.	14	14	0	H	L	1	1	0	0	0	0	0	0	14	$0	N		$2,000	Y	100D Rd		
6426.03	ROSITA - TWAN F.S.R.	1.3	1.3	0	L	L	0	0	0	0	0	0	0	0	1.3	$0	N		$500	N			
6426.04	ROSITA - TWAN EAST F.S.R.	1.5	1.5	0	L	L	0	0	0	0	0	0	0	0	1.5	$0	N		$500	N			
6426.05	ROSITA - TWAN NORTH F.S.R.	0.25	0.25	0	L	L	0	0	0	0	0	0	0	0	0.25	$0	N		$200	N			
6426.06	ROSITA - FIR F.S.R.	16	16	0	H	L	0	0	0	0	0	1	0	0	16	$0	N		$2,000	N			
6426.07	ROSITA - ARTHUR F.S.R.	1.4	1.4	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6426.08	ROSITA - MACKIN WEST F.S.R.	3.5	3.5	0	L	L	0	0	0	0	0	0	0	0	3.5	$0	N		$2,000	N			
6426.09	ROSITA - RENNER F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	2	$0	N		$1,000	N			
6426.10	ROSITA - MACKIN TEN F.S.R.	0.7	0.7	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6426.11	ROSITA - FIR EAST F.S.R.	12	12	8	H	L	0	0	0	3	0	0	0	0	8	$0	N		$2,500	N			
6426.12	ROSITA - FIR TWELVE F.S.R.	0.2	0.2	0.2	L	L	0	0	0	0	0	0	0	0	0.2	$0	N		$200	N			
6426.13	ROSITA - OWEN F.S.R.	3.7	3.7	0	L	L	0	0	0	0	0	0	0	0	3.7	$0	N		$1,000	N			
6426.14	ROSITA - OWEN NORTH F.S.R.	1.2	1.2	0	L	L	0	0	0	0	0	0	0	0	1.2	$0	N		$500	N			
6426.15	ROSITA - WEBSTER F.S.R.	10.6	10.6	7	L	L	0	0	0	1	0	0	0	0	3.6	$0	N		$1,000	N			
6426.16	ROSITA - FIR SOUTH F.S.R.	2.6	2.6	0	L	L	0	0	0	0	0	0	0	0	2.6	$0	N		$1,000	N			
6426.17	ROSITA - FIR WEST F.S.R.	1.8	1.8	1.8	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
6426.18	ROSITA - REC F.S.R.	0.5	0.5	0	M	L	0	0	0	0	0	0	0	0	0.5	$0	N		$500	N	REC SITE ACCESS		
6568.01	BECHER LAKE F.S.R.	9.5	9.5	9.5	L	L	0	0	1	0	0	0	0	0	0	$0	N		$0	N			
6970.01	CHILCOTIN SOUTH F.S.R.	51	51	51	H	M	100	10	3	20	0	3	30	2	10	$0	N		$10,000	Y			
7564.01	JOES LAKE F.S.R.	31	31	31	H	M	0	0	2	2	0	0	0	0	0	$0	Y		$100,000	Y	Alkali Creek Culvert Replacment With Bridge @ .5 Km		
7721.01	CHIMNEY LAKE F.S.R.	69.5	69.5	69.5	M	L	50	5	2	6	1	1	30	1	0	$0	N		$0	Y			
7721.02	CHIMNEY LAKE - 1200 F.S.R.	7.8	7.8	0	L	L	0	0	0	0	0	0	0	0	7.8	$0	N		$1,000	N			
7721.03	CHIMNEY LAKE - GULATCH F.S.R.	14.3	14.3	14.3	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
7968.01	MOFFAT LAKE F.S.R. SEC. A	28	28	28	H	L	10	5	1	5	0	0	10	0	0	$6,000	N		$0	N			
7968.05	MOFFAT LAKE - SPOKIN F.S.R.	9	0	0	L	L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.06	MOFFAT LAKE - SPOKIN SIX F.S.R.	1.5	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.07	MOFFAT LAKE - SPOKIN SEVEN F.S.R.	0.56	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
7968.08	MOFFAT LAKE - SPOKIN EIGHT F.S.R.	0.4	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.09	MOFFAT LAKE - SPOKIN NINE F.S.R.	1.74	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.10	MOFFAT LAKE - SPOKIN TEN F.S.R.	3.76	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.11	MOFFAT LAKE - SPOKIN ELEVEN F.S.R.	0.44	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.12	MOFFAT LAKE - SPOKIN TWELVE F.S.R.	0.49	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8041.01	BIG LAKE F.S.R.	9	9	9	L	L	0	0	0	5	0	0	0	0	0	$0	N		$0	N			
8041.02	BIG LAKE - SOUTH F.S.R.	3	3	3	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8054.01	PLACE LAKE F.S.R.	13.3	13.3	0	H	L	10	0	1	0	0	0	10	0	13.3	$0	N		$2,000	N	REQUIRES UPGRADING		
8055.01	MAYFIELD LAKE F.S.R.	10	10	10	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N			
8055.02	MAYFIELD LAKE - RANGE F.S.R.	5.6	5.6	5.6	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8055.03	MAYFIELD LAKE - PORTER CREEK F.S.R.	2.8	2.8	2.8	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8055.04	MAYFIELD LAKE - SPRINGHOUSE F.S.R.	5.75	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8055.05	MAYFIELD LK SPRINGHOUSE HILLS F.S.R	2.8	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8077.01	SKELTON LAKE F.S.R.	22	22	22	L	L	0	1	0	2	0	0	0	0	0	$0	N		$0	Y	700 Rd		
8107.01	SHERIDAN CREEK F.S.R.	4.3	4.3	0	L	L	1	0	0	0	0	0	1	0	4.3	$0	N		$0	Y			
8363.01	GROUNDHOG CREEK F.S.R.	22.8	22.8	22.8	L	L	0	2	0	2	0	0	0	0	0	$0	N		$0	Y	5400 Rd		
8368.01	ROCKY LAKE F.S.R.	6	6	6	L	L	0	2	0	2	0	0	0	0	0	$0	N		$0	N			
8368.02	ROCKY LAKE - WEST F.S.R.	5.1	5.1	0	L	L	0	0	0	0	0	0	0	0	5.1	$0	N		$0	N			
8368.03	ROCKY LAKE - VEDAN F.S.R.	6	6	0	L	L	0	0	0	0	0	0	0	0	6	$0	N		$0	N	NEW SB ROAD		
8375.01	MUD CREEK F.S.R.	18.6	18.6	0	L	L	0	0	0	0	0	0	0	0	18.6	$0	N		$1,500	N			
8389.01	LITTLE CHURN CREEK F.S.R.	10	0	0			0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8395.01	HAWKS CREEK F.S.R.	8.1	8.1	0	L	L	0	0	0	0	0	0	0	0	8.1	$0	N		$1,000	Y			
8395.02	HAWKS CREEK - FREDDY F.S.R.	2.1	2.1	0	L	L	0	0	0	0	0	0	0	0	2.1	$0	N		$1,000	N			
8395.03	HAWKS CREEK-BIG LAKE CREEK F.S.R	0.6	0.6	0	L	L	0	0	0	0	0	0	0	0	0.6	$0	N		$500	N			
8395.04	HAWKS CREEK-SKULOW LAKE F.S.R	0.3	0.3	0	L	L	0	1	0	0	0	0	0	0	0.3	$0	N		$500	N	RESEARCH PROJECT ACC.		
8395.05	HAWKS CREEK - FIVE F.S.R.	0.9	0.9	0	L	L	0	0	0	0	0	0	0	0	0.9	$0	N		$500	N			
8491.01	WILLAN CREEK F.S.R.	2.8	2.8	0	L	L	0	0	0	0	0	0	0	0	2.8	$0	N		$1,000	N			

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
8674.01	MALINDA CREEK F.S.R.	1.3	1.3	1.3	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
8930.01	SOLOMON LAKE F.S.R.	7.2	7.2	7.2	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
8930.02	SOLOMON LAKE - NORTH F.S.R.	2.2	2.2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9116.01	COLLINS CREEK F.S.R.	3	3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9424.01	TILL LAKE F.S.R.	2.1	2.1	0	H	L	0	0	0	0	0	1	0	0	2.1	$0	N		$1,000	N	TILL LK REC SITE		
9425.01	HOWES LAKE F.S.R.	7.3	7.3	7.3	L	L	0	1	0	0	0	1	0	0	0	$0	N		$0	N			
9429.01	FOREST LAKE F.S.R.	2.9	2.9	1.5	H	L	1	0	0	1	0	1	0	0	1.4	$0	N		$1,000	N			
9435.01	BORLAND CREEK F.S.R.	5	0	0	L	L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
9444.01	BAMBRICK CREEK F.S.R.	11	11	0	L	L	0	0	0	0	0	0	0	0	11	$0	N		$2,500	N			
9444.02	BAMBRICK CREEK - SOUTH F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9444.03	BAMBRICK CREEK - SOUTH F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	
9489.01	GUY MOUNTAIN F.S.R.	8.4	8.4	8.4	L	L	0	0	0	2	0	0	0	0	0	$0	N		$3,000	N			
9489.02	GUY MOUNTAIN - NORTH F.S.R.	0.7	0.7	0.7	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
9490.01	RIDGE F.S.R.	3.6	3.6	2	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N	1.6 SBFEP DEACTIVATED	SP	$0
9491.01	STROUSE F.S.R.	22.2	22.2	18	L	L	0	1	0	1	0	0	0	0	0	$0	N		$0	N	4.2 SBFEP DEACTIVATED	SP	$0
9491.02	STROUSE LAKE - F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9715.01	MONS LAKE F.S.R.	0.2	0.2	0	L	L	0	0	0	0	0	1	0	0	0.2	$0	N		$500	N			
9715.02	MONS LAKE - F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	1	0	0	0.3	$0	N		$500	N			
9730.01	DEWER LAKE F.S.R.	4.1	4.1	4.1	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
9770.01	MACKIN CREEK F.S.R.	10	10	0	L	L	0	1	0	0	0	0	0	0	10	$0	N		$1,500	N			
9806.01	HART LAKE F.S.R.	1.1	1.1	0	L	L	0	0	0	0	0	0	0	0	1.1	$0	N		$1,000	N			
9882.01	JOHNNY CREEK F.S.R.	0.9	0.9	0.9	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
		857.5	814	626.7			190	41	19	115	0	17	81	6	186.55	$6,000		0	$359,900				$0

Horsefly Forest District

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
1240.01	HORSEFLY - QUESNEL LAKE F.S.R	2.0	2	1.6	L	L	1		20			1			1.6			1000	200	N	brushing		
1242.01	HORSEFLY RIVER F.S.R.	33.3	33.3	33.3	H	H	1	2	5	3					33.3			6000	1430	Y	brushing 12km		
1242.02	HORSEFLY RIVER - MCKUSKY F.S.R.	21	19.4	7.1	H	H	1	3	6	2		1			19.4			15000	2000	Y	sight distance 6711		
1242.03	HORSEFLY RIVER-MACKAY RIVER F.S.R.	15.2	6.9	6.9	M	M			3	1	1				6.9					Y			
1242.04	HORSEFLY RIVER-BOULDERY CREEK F.S.R	33.3	33.7	33.7	M	M			2	1		1			33.7			15000	4000	Y	Bioeng bouldery slide 6120		
1242.05	HORSEFLY RIVER - PRAIRIE F.S.R.	11.8	12.6	7	L	L	2		4	1		1			12.6				1320	N	surface maintenance		
1242.06	HORSEFLY RIVER - WHISKEY F.S.R.	0.7	0.7	0.7	L	L			3	1					0.7					Y			
1242.07	HORSEFLY RIVER - HAWKLEY F.S.R.	0.2	0.2	0.2	L	L			1	1	1				0.2					Y			
1253.01	BLACK CREEK - BOSK LAKE F.S.R.	29.9	29.9	29.9	H	H			8	2					29.9				3300	Y	surface maintenace		
1253.02	BLACK CREEK - ELBOW LAKE F.S.R.	1.3	1.3		L	L			2	2		1			1.3			650	150	N	brushing surface maintain		
1253.03	BLACK CREEK-TISDALL SEC.A F.S.R.	10.5	10.5	10.7	H	H			3	2					10.5				1100	N	" "		
1253.03	BLACK CREEK-TISDALL SEC. B F.S.R.	1.2	1.2	1.2	M	M			3			1			1.2				200	N	" "		
1253.04	BLACK CREEK-MCKINLEY LAKE F.S.R.	2.2	2.2		L	L	4		1			1			2.2				300	N	" "		
1253.05	BLACK CREEK - CRUISER F.S.R.	7.4	7.4		L	L			2	2		1			7.4				880	N	" "		
1253.06	BLACK CREEK - TIMBUKTWO F.S.R.	0.5	0.5		L	L														N		SP	1000
1253.07	BLACK CREEK - TIMBUKTHREE F.S.R.	0.2	0.2		L	L														N		SP	500
1253.08	BLACK CREEK - BOSCAR LAKE F.S.R.	1.8	1.8		L	L			1											N		T	
1254.	ARCHIE LAKE - HORSEFLY LAKE CABIN	0	0																	N	deleted		
3074.01	WARREN MOUNTAIN LOOKOUT & ACCESS	2.8	2.8																	N	no file record - deleted		
3295.01	BLACK MOUNTAIN F.S.R.	4.9	4.9																	N	deleted 92/12/17		
4148.	SUEY LOOKOUT AND ACCESS TRAIL	7.0	7																	N	deletion in progress		
4160.01	HORSEFLY - LIKELY F.S.R.	25.6	25.6		M	M			4						25.6			5000	3000	Y	brush 10km		
4160.02	HORSEFLY - GAVIN LAKE F.S.R.	18	22		M	M			5		1	1			22				2500	Y	Surface maintenance		
4160.03	HORSEFLY - POLLEY LAKE F.S.R.	3.7	2.9		L	L			2			1			3.7				400	N	" "		
4160.05	HORSEFLY - DITCH F.S.R	0.9	0.9		L	L														N			

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
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		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
4160.04	HORSEFLY - CUB CREEK F.S.R.	2.9	2		L	L			1						2					N			
4161.01	SPANISH LAKE F.S.R.	34.8	24.1	24.1	H	H	1		5			1			24.1				3080	Y	surface maintenance		
4161.02	SPANISH - CLEARBROOK F.S.R.	9.9	9.9	9.9	H	H			2	2		1			9.9				1200	N	" "		
5382.01	HENDRIX CREEK F.S.R. SECTION B	20.8	17.2	17.2	H	H		3	3	2		1			17.2				2200	Y	" "		
5382.02	HENDRIX - MOLYBDONITE F.S.R.	10.2	10.2	10.2	H	H			4	1					10.2					Y			
5382.03	HENDRIX - MCKINLEY F.S.R.	1.7	1.7	1.7	H	H			2	1					1.7					N			
5382.07	HENDRIX - DIVAN F.S.R.	6.2	6.2	6.2	M	M		3	1	2					6.2				660	N			
5654.01	MOREHEAD - BOOTJACK F.S.R.	7.8	7.8	7.8	H	H	1		2	2	1	1								N			
5654.02	MOREHEAD - BOOTJACK - GAVIN F.S.R.	12.1	12.1		L	L			1	1	1				12.1				1300	Y	surface maintenance		
5654.04	MOREHEAD-BOOTJACK BOAT LAUNCH F.S.R	1.9	1.9		L	L									1.9					N			
5662.01	MOREHEAD - BEAVERMOUTH F.S.R.	31.5	31.5		L	L														N	deletion in progress		
5662.02	MOREHEAD - BUXTON CREEK F.S.R.	9.8	9.8	9.8	H	H			4	1					9.8					N			
5662.03	MOREHEAD - JACOBIE CREEK F.S.R.	0.8	0.8		L	L			1											N		T	
6142.01	CARIBOO RIVER F.S.R.	62.8	60.8	60.8	H	H	1	1	6	1	2	1			54km			500	5940	Y	brushing rec site		
6142.02	CARIBOO RIVER-SPANISH CREEK F.S.R.	9.7	5		L	L									5				550	N	deletion requested 4.7km		
6142.03	CARIBOO RIVER - NORTH F.S.R.	3.8	4.3	4.3	L	L			1	1					4.3			20000		Y	widen switch back remove	Clair Cr. Culvert	
6142.04	CARIBOO RIVER - ISHKLOO CREEK F.S.R	2.5	2.5	2.5	L	L				1					2.5					N	deletion requested 2.5km		
6398.01	KEITHLEY CREEK-BARKERVILLE F.S.R.	10	10		L	L														N	deletion requested 10km		
7508.	VIEWLAND MOUNTAIN REPEATER ACCESS	1.9	1.9		L	L														N	no file record - deleted		
7968.01	MOFFAT LAKE SEC. B F.S.R.	42.5	42.5	42.5	H	H	1		7	2		1			42.5				2200	Y	surface maintenance		
7968.02	MOFFAT SOUTH WING F.S.R.	1.9	2	1.9	L	L			2											N		T	
7968.03	MOFFAT WEST WING F.S.R.	0.8	0.8		L	L			1											N		T	
7968.04	MOFFAT NORTH WING F.S.R.	0.9	0.9		L	L			1											N		T	
7968.05	MOFFAT - BUSTER F.S.R.	1.2	1.2		L	L			2						1.2					Y	small business FD#2	T	
8294.01	CHINA CABIN CREEK F.S.R.	3	3		L	L			1											N	" " "	T	
8294.02	CHINA CABIN CREEK - EAST F.S.R.	0.4	0.4		L	L			1											N	" " "	T	

Project #	Forest Service Road	road register	Length		Priority	Risk	Residences	Commercial Use	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
			actual	Under permit					First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
8294.03	CHINA CABIN CREEK - WEST F.S.R.	1.1	1.1	1.1	M	M				1					1.1					N	deletion requested R10154		
8299.01	KEITHLEY CREEK SOUTH F.S.R.																			N	deleted R01350		
8359.01	HARVEYS CREEK F.S.R.	11.2	14.3	14.3	L	L	2		2	1					14.3			15000	1430	Y	slide repair 9.5 km		
8359.02	HARVEYS CREEK - WEST F.S.R.	1.6	1.6		L	L														N	deletion requested		
8377.01	GRAVEL CREEK F.S.R.	6.7	6.7		L	L			1						1				200	N			
8377.02	GRAVEL CREEK - NORTH F.S.R.	5.6	5.6		L	L														N	deletion requestd		
8380.01	KANGAROO CREEK F.S.R.	20	21.3	21.3	H	H			12	1					21.3					N	small business FD#2		
8380.02	KANGAROO CREEK - WEST F.S.R.	5.3	7.2	7.2	L	L			2						7.2					N	" " "		
8380.03	KANGAROO CREEK - SWIFT CREEK F.S.R.	2	2		L	L			1											N	" " "		
8380.04	KANGAROO CREEK - NORTH F.S.R.	0.7	0.7		L	L			1											N	" " "		
8380.05	KANGAROO CREEK - MOUNTAIN F.S.R.	1.4	1.4		L	L			1											N	" " "		
8380.06	KANGAROO CREEK - BORDER F.S.R.	1	1		L	L			1											N	" " "		
8380.07	KANGAROO CREEK - SIDEWINDER F.S.R.	1.2	1.2		L	L			1											N	" " "		
8380.08	KANGAROO CREEK - SOUTH F.S.R.	1.5	1.8		L	L			1											N	" " "		
8380.09	KANGAROO CREEK - HIGH F.S.R.	1.6	2.1		L	L			1											N	" " "		
8380.10	KANGAROO CREEK - LOW F.S.R.	2.3	2.3		L	L			2											N	" " "		
8380.11	KANGAROO CREEK - LAST F.S.R.	6.2	6.2	6.2	M	M			3						6.2					N	" " "		
8380.12	KANGAROO CREEK - MAUD F.S.R.	0.7	0.7	0.7	M	M			2						0.7					N	" " "		
8380.13	KANGAROO CREEK - MAUD WEST F.S.R.	1.7	1.7	1.7	M	M			2						1.7					N	" " "		
8571.01	CORNER LAKE F.S.R.	5.1	5.1		L	L			1											N	" " "		
8571.02	CORNER LAKE - WEST F.S.R.	0.95	0.95		L	L			1											N	" " "		
8571.03	CORNER LAKE - NORTH F.S.R.	0.9	0.9		L	L			1											N	" " "		
8571.04	CORNER LAKE - EAST F.S.R.	0.6	0.6		L	L			1											N	" " "		
8572.01	LITTLE LAKE F.S.R.	3	7.1	7.1	H	H			6	1										N	" " "		
8646.01	CRAZY LAKE F.S.R.	11.4	11.4		L	L			2										200	N	Surface maintenance		
8646.02	CRAZY LAKE - EAST F.S.R.	1.2	1.2		L	L			1										100	N	" "		
8646.03	CRAZY LAKE - NORTH F.S.R.	1.4	1.4		L	L			1										100	N	" "		
8681.01	WHIFFLE LAKE F.S.R.	17.7	17.7		L	L			2	2					10				2000	N	" "		

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		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)				(y/n)			
8681.02	WHIFFLE LAKE - PLATO F.S.R.	2.6	2.6		L	L		1	1						2.6						N			
8682.01	HEN INGRAM F.S.R.	15.9	14.9	14.9	M	M			3	2					14.9						N			
8682.02	HEN INGRAM - NORTH F.S.R.	5.7	5.2	4	M	M			1	1					4						N			
8684.01	VIEWLAND F.S.R.	9.1	9.4	9.4	L	L			2	1					9.4						N			
8684.02	VIEWLAND - NORTH F.S.R.	0.5	0.5		L	L															N	small business FD#2		
8684.03	VIEWLAND - NORTH EAST F.S.R.	0.3	0.3		L	L															N	" " "		
8814.01	ANTOINE LAKE F.S.R.	10.1	10.1		L	L	3								5				550		N	surface maintenance		
8815.01	BELLS LAKE F.S.R.	3.0	3		L	L	1								3						N	small business FD#2		
8815.02	BELLS LAKE - SOUTH F.S.R.	0.8	0.8		L	L															N	deletion requested		
8891.01	SUCKER CREEK F.S.R.	6.0	6	6	H	H	1		4	1					5			15000	550		N	Surface repair pilings maintenance/r		
8891.02	SUCKER CREEK - NORTH F.S.R.	2.3	2.3	2.3	H	H			1	1					2.3						N	" "		
8891.03	SUCKER CREEK - EAST F.S.R.	1	0.7	0.7	L	L			1						0.7						N	" "		
8998.01	JACOBIE LAKE F.S.R.	3.5	3.5	3.5	M	M			1	1					3				500		Y	" "		
9127.01	BEVERIDGE LAKE F.S.R.	2.2	2.2	2.2	L	L			1	1					1						N			
9128.01	HORSEFLY BAY F.S.R.	2.8	2.8		L	L			1												N		T	
9162.01	SAUSSER LAKE F.S.R.	8.8	8.8		L	L			3						8				880		N	small business FD#2		
9163.01	MILES CREEK F.S.R.	0.7	0.7		L	L			2												N			
9192.01	ABBOTT LAKE F.S.R.	1.9	1.9		L	L				1											N	deleted R11388		
9239.01	COSSACK LAKE F.S.R.	6.2	6.2	6.2	H	H	2		3	1					6.2				700		N			
9239.02	COSSACK LAKE - WEST F.S.R.	0.6	0.6		M	M			2						0.6						N	small business FD#2		
9239.03	COSSACK LAKE - EAST F.S.R.	0.7	0.7		M	M			2						0.7						N	" " "		
9285.01	MACDONALD MEADOW F.S.R.	4.0	4	4	M	M			3	1					4						N	" " "		
9285.02	MACDONALD - NORTH F.S.R.	2.3	2.3		L	L			2						2.3						N			
9286.01	DEERHORN F.S.R.	7.9	7.9	7.9	M	M			3	2					7.9				770		N			
9286.02	DEERHORN EAST F.S.R.	2.8	2.8		L	L	1		2						2.8				330		N			
9286.03	DEERHORN - SOUTH F.S.R.	0.7	0.7		L	L			1												N			
9317.01	WIGGINS CREEK F.S.R.	1.0	0.3	0.3	M	M	2		2	2											N			
9320.01	YANKS PEAK F.S.R.	10.8	10.8		L	L			1	1	3				10.8				3000		Y	surface maintenance		
9349.01	MALCOLM LAKE F.S.R.	2.2	2.2		L	L			1						2						N	small business FD#2		
9382.01	BIRCH BAY F.S.R.	0.3	0.3		L	L															N	Float plane access		
9531.01	WOODJAM F.S.R.	9.5	9.5	9.5	L	L			2	1					6				660		Y			
9551.01	WEBBER MEADOWS F.S.R.	4.5	4.5	4.5	M	M			1	1					4.5						N	small business FD#2		

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register (km)	actual (km)	Under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	First Nations (#)	Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (km)	dust control ($)	culvert replace (y/n)	other	cost/yr	(y/n)		Type (SP or P)	Cost
9572.01	DOG MEADOW F.S.R.		3.5	3.5	L	L			1	1					3.5					N	R0 1317		
9705.01	KWUN LAKE F.S.R.	1.5	1.5																		not constructed delete		
9773.01	GAVIN CREEK F.S.R.																				not constructed delete		
9862.01	FALSE ARM F.S.R.	0.8	0.8	0.8	L	L			1	1					0.8					N			
Total			**760**															**93150**	**49880**				

100 Mile House Forest district

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
1231.01	BEGBIE LOOKOUT & ACCESS ROAD	0.6	0.6		PROT	L	L	0	0	0	0	0	0	0	0								
4451.01	GUSTAFSEN LAKE F.S.R.	33.0	33.0	31.7	AinsWELD	M	M	1	10	0	4	0	1	0	1	33			6,000.00		control Ditch water near fish streams		
4451.02	GUSTAFSEN - DOG CREEK F.S.R.	23.4	23.4	19.5	WELD	L	L	0	4	0	2	0	0	0	0	23			6,000.00		control Ditch water near fish streams		
4451.03	GUSTAFSEN - NEILSON LAKE F.S.R.	16.9	16.9	11.5	WELD	L	L	0	4	0	1	0	1	0	0								
4451.04	GUSTAFSEN - WEST F.S.R.	13.2	13.2	9.6	WELD	L	L	0	4	0	2	0	0	0	0								
4451.05	GUSTAFSEN - EDMONDS CREEK F.S.R.	6.2	6.2	6.2	Ains	L	L	0	1	0	1	0	0	0	0								
4451.06	GUSTAFSEN - KELSEY F.S.R.	3.8	3.8			L	L	0	0	0	0	0	0	0	0								
4451.07	GUSTAFSEN - NORTH F.S.R.	6.5	6.5	6.4	WELD	L	L	0	4	0	2	0	0	0	0								
4451.08	GUSTAFSEN - SOUTH F.S.R.	6.3	6.3	12.5	WELD	L	L	0	4	0	2	0	0	0	0								
4451.09	GUSTAFSEN - SWAMP F.S.R.	1.9	1.9	1.8	WELD	L	L	0	1	0	1	0	0	0	0								
4451.10	GUSTAFSEN - EAST F.S.R.	7.6	7.6	7.7	WELD	L	L	0	2	0	1	0	0	0	0								
4451.11	GUSTAFSEN - BIG LAKE F.S.R.	10.9	10.9		SBFP	L	L	0	2	0	1	0	0	0	0	11						SP	$5,000
4451.12	GUSTAFSEN LAKE F.S.R.	2.0	2.0			L	L	0	1	0	1	0	0	0	0								
4451.13	GUSTAFSEN - FLAT LAKES F.S.R.	2.2	2.2			L	L	0	1	0	1	0	0	0	0								
4465.01	TIMOTHY MTN. LOOKOUT & ACCESS	7.1	3.5		PROT	L	L	0	4	0	0	0	0	0	0								
5281.01	LIME LOOKOUT F.S.R.	10.7	10.7		PROT	L	L	0	1	0	0	0	1	0	0							sp	$20,000
5289.01	WINDY MOUNTAIN F.S.R.	27.0	27.0	24	Ains	L	L	15 Cabins	5	0	2	0	4	0	0				$2,500		control ditch water near fish streams		
5289.02	WINDY - FRENCH F.S.R.	0.4	0.4			L	L	0	0	0	0	0	1	0	0	0.4							
5289.03	WINDY - PREACHER F.S.R.	7.2	7.2	7.2	Ains	L	L	0	2	0	1	0	1	0	0	7.2			$2,500				
5289.04	WINDY - JUDSON F.S.R.	11.7	11.7	11.7	Ains	L	L	0	3	0	1	0	1	0	0	11.7			$1,500				
5289.06	WINDY - SUMMIT F.S.R.	2.1	2.1		SBFP	L	L	0	1	0	0	0	0	0	0						sp km 0-1.5 p km1.5-2.0	sp/p	$2,500
5289.09	WINDY - BOWERS F.S.R.	1.8	1.8		SBFP	L	L	0	1	0	1	0	0	0	0	1.8			$1,500				
5382.01	HENDRIX CREEK F.S.R. SECTION A	11.0	11.0	6	Weld	M	M	2	5	0	3	1	1	0	0								
5382.04	HENDRIX CREEK - MINE F.S.R.	8.1	8.1			L	M	0	1	0	1	1	0	0	0	8.1			$2,000				
5402.01	JESMOND LOOKOUT AND ACCESS ROAD	5.3	5.3	3	Lig/PROT	L	L	0	2	0	1	0	0	0	0								
5402.02	JESMOND F.S.R.	4.1	4.1	4.1	Lig	L	L	0	2	0	2	0	0	0	0								
5687.01	RIVER LAKES F.S.R.	15.1	15.1	15.1	Ains	L	L	0	4	0	2	0	0	0	0								
5687.02	RIVER LAKES - BIG BAR LAKE F.S.R.	17.0	17.0	17	Ains	L	L	0	4	0	2	0	0	0	0					yes			

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
5687.03	RIVER LAKES - FIFTYNINE CREEK F.S.R	6.1	6.1	6.1	Ains	L	L	0	4	0	1	0	0	0	0								
5712.01	CLINTON - LOON LAKE F.S.R.	63.4	63.4	63.4	Ains	M	H	2	6	0	2	0	2	0	0				$6,000		control ditch water near fish streams		
5712.02	CLINTON - BONAPARTE F.S.R.	5.5	5.5			L	L	0	1	0	2	0	0	0	0	5.5							
5712.03	CLINTON - YOUNG LAKE F.S.R.	6.0	6.0			L	L	0	1	0	2	0	0	0	0	6							
5712.06	CLINTON - UPPER LOON LAKE F.S.R.	29.3	29.3	29.3	Ains	L	L	0	8	0	2	0	0	0	0								
5712.07	CLINTON - TULERIC F.S.R.	10.0	10.0	10	Ains	L	H	2	1	0	1	0	0	0	0	10			$5,000	yes			
5712.09	CLINTON - ENRIGHT F.S.R.	3.3	3.3	3.3	AINS	L	L	0	3	0	1	0	0	0	0								
5712.10	CLINTON - MOUNT GRANT F.S.R.	4.7	4.7		SBFP	L	M	1	2	0	1	0	0	0	0	4.7			$2,500				
5956.01	LANG LAKE F.S.R.	25.5	25.5	15	Weld	L	M	1	1	0	2	0	4	0	1	10			$2,500		center section beyond private proerty	SP	$15,000
5956.02	LANG - ACCESS #1 F.S.R.	0.3	0.3			L	L	0	0	0	0	0	0	0	0	0.3						SP	$2,500
5956.03	LANG - ACCESS #2 F.S.R.	1.0	1.0			L	L	0	0	0	0	0	0	0	0	1						SP	$2,500
5956.04	LANG - ACCESS #3 F.S.R.	12.6	12.6		WELD	L	L	0	1	0	1	0	0	0	0								
5956.05	LANG LAKE - BOOMERANG F.S.R.	0.6	0.6			L	L	0	1	0	0	0	1	0	0	0.6					temp deact done in1996	T	$1,995
6048.01	TATTON - CANAMA F.S.R.	17.0	17.0			M	M	6	4	0	0	0	1	0	0	17			$1,500				
6048.02	TATTON - HELENA F.S.R.	3.9	3.9			L	L	0	4	0	0	0	1	0	0	3.9			$500				
6048.03	TATTON - SNAGG F.S.R.	20.7	20.7	20.7	Weld	L	L	0	4	0	2	0	1	0	0	21			$1,500				
6048.04	TATTON - MCKINLEY F.S.R.	2.3	2.3			L	M	2	4	0	2	0	0	0	0	2.3			$500				
6048.05	TATTON - BIG LAKE F.S.R.	2.0	2.0			L	L	0	0	0	0	0	1	0	0	2						SP	$5,000
6061.01	BOWERS - CANIM F.S.R.	36.2	36.2	36.2	Weld	M	L	0	2	0	4	0	3	0	0	36	$30,000	y		yes	Fish blockage wolf creek		
6061.02	BOWERS - WINDY CREEK F.S.R.	10.0	10.0			L	L	15 cabins	1	0	0	0	2	0	0	3	$50,000	Y	$1,000		Preacher creek bridge installation	P	$15,000
6061.03	BOWERS - JIM F.S.R.	5.1	5.1		SBFP	L	L	0	1	0	1	0	0	0	0	5.1			$2,500				
6061.04	BOWERS - LANDING F.S.R.	0.5	0.5			L	L	0	0	0	0	0	1	0	0		$10,000						
6061.05	BOWERS - DEKA F.S.R.	13.3	8.0		SBFP	L	L	0	1	0	2	0	0	0	0	8			$2,000				
6061.06	BOWERS - CANIMRED F.S.R.	10.0	10.0		SBFP	L	H	0	2	0	4	0	0	0	0	6			$2,000			sp	$3,000
6061.07	BOWERS - LORIN F.S.R.	6.0	6.0			L	L	0	0	0	0	0	1	0	0	6	$30,000	y	$1,000	yes	Fish blockage		
6061.08	BOWERS - DEKA SOUTH F.S.R.	0.3	0.3		SBFP	L	L	0	0	0	0	0	0	0	0						p- 1997	p	
6061.09	BOWERS - DEKA WEST F.S.R.	0.8	0.8		SBFP	L	L	0	0	0	0	0	0	0	0						p- 1997	p	
6061.10	BOWERS - CANIM RED SOUTH F.S.R.	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0							sp	$1,000
6061.11	BOWERS - CANIM RED EAST F.S.R.	0.4	0.4		SBFP	L	L	0	1	0	2	0	0	0	0	0.4			$500				
6061.12	BOWERS - CANIM RED NORTH F.S.R.	2.9	2.9		SBFP	L	L	0	1	0	2	0	0	0	0	2.9			$2,000				
6315.01	EAGAN - BONAPARTE F.S.R.	56.6	56.6	10	Ains	M	H	10	6	0	4	0	5	0	0	56			$10,000				

Project #	Forest Service Road	Length		Under	Priority	Risk	Residences	Commercial	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual	permit				Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
6315.02	BONAPARTE - SPUR #1 F.S.R.	4.5	4.5			L	L	0	0	0	0	0	1	0	0								
6315.03	BONAPARTE - SHARP LAKE F.S.R.	4.5	4.5			L	L	0	1	0	1	0	0	0	0							SP	$10,000
6315.04	BONAPARTE - YOUNG LAKE F.S.R.	6.0	6.0			L	L	0	1	0	1	0	0	0	0							SP	$10,000
6315.05	BONAPART - SCOT	1.9	1.9			L	L	0	0	0	0	0	1	0	0	1.9			$500				
6315.06	BONAPART - HAMMER	0.6	0.6			L	L	0	0	0	0	0	1	0	0	0.6			$100				
6315.07	BONAPARTE - RAYFIELD F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0	0							P	$500
6315.08	BONAPARTE - PRESSY F.S.R.	2.4	2.4		SBFP	L	L	0	1	0	1	0	0	0	0	2.4			$2,000				
6315.09	BONAPARTE - LITTLE SCOTT F.S.R.	0.2	0.2			L	L	0	0	0	0	0	1	0	0	0.2			$100				
6315.10	BONAPARTE - NORTH HAMMER F.S.R.	0.3	0.3			L	L	0	0	0	0	0	1	0	0	0.3			$100				
6315.11	BONAPARTE - CAMPEAU NORTH F.S.R.	2.0	2.0		SBFP	L	L	0	1	0	1	0	0	0	0	2			$1,000				
6315.12	BONAPARTE - RAYFIELD SOUTH F.S.R.	5.1	5.1		SBFP	L	L	0	2	0	1	0	0	0	0	5.1			$2,500				
6315.13	BONAPARTE - SIMMONS F.S.R.	3.0	3.0		SBFP	L	L	0	0	0	0	0	0	0	0							sp	$3,000
6315.14	BONAPARTE - FROSTY F.S.R.	2.4	2.4		SBFP	L	L	0	0	0	1	0	0	0	0								
6411.01	SPOUT - OIE F.S.R.	27.1	27.1	3	Weld	L	L	0	1	0	2	0	1	0	0								
6817.01	PAVILION F.S.R.	0.0	0.0			L	L	0	0	0	0	0	0	0	0						Road not accessable do to private property Kamloops FR		
6817.02	MAIDEN - EDWARD GULCH F.S.R.	18.4	18.4			L	L	0	0	0	0	0	0	0	0								
6818.01	HART RIDGE F.S.R.	8.9	8.9			L	M	1	2	0	3	0	0	0	0	8.9			$1,500				
6818.02	HART RIDGE - CLINTON CREEK F.S.R.	8.1	8.1			L	L	0	2	0	3	0	0	0	0	8.1			$1,500				
7357.01	GREEN LAKE F.S.R.	8.0	8.0		SBFP	L	L	0	1	0	2	0	0	0	0	8			$4,000				
7357.02	GREEN LAKE - JIM CREEK F.S.R.	6.1	6.1			L	L	0	1	0	0	0	1	0	0							SP	
7357.03	GREEN LAKE - WEST F.S.R.	3.1	3.1			L	L	0	1	0	0	0	0	0	0							SP	
7357.04	GREEN LAKE - NOLAN F.S.R.	2.4	2.4			L	L	0	1	0	0	0	1	0	0							SP	
7357.07	GREEN LAKE - GRAHAM F.S.R.	2.1	2.1			L	L	0	1	0	0	0	0	0	0							SP	
7357.08	GREEN LAKE - GRAHAM WEST	1.1	1.1			L	L	0	1	0	0	0	0	0	0							SP	
7357.09	GREEN LAKE - 70 MILE WEST F.S.R.	2.1	2.1	2.1	Weld	L	L	0	1	0	3	0	0	0	0							SP	
7357.10	GREEN LAKE - NOLAN LAKE EAST F.S.R.	1.1	1.1		SBFP	L	L	0	1	0	0	0	0	0	0							SP	$1,500
7357.11	GREEN LAKE - LITTLE GREEN LAKE FSR	3.7	3.7		SBFP	L	L	0	1	0	1	0	0	0	0	3.7			$2,000				
7357.12	GREEN LAKE -JIM LAKE SOUTH	0.8	0.8		SBFP	L	L	0	0	0	0	0	0	0	0							SP	$1,000
7357.13	GREEN LAKE -PRESSY LAKE WEST	1.0	1.0		SBFP	L	L	0	1	0	0	0	0	0	0	0.5			$500		sp km 0.5-1.0	SP	$500

Project #	Forest Service Road	road register	Length actual	Under permit	Priority	Risk	Residences	Commercial Use	Users & Access Needs							Maintenance Activities					Major Structures	Comments	Deactivation	
									First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access		Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)		(km)	($)	(y/n)			(y/n)			
7376.02	ROCKY - HOWARD F.S.R.	5.0	5.0			L	L	0	0	0	0	0	1	0		0	5			$1,500				
7450.01	MEADOW LAKE F.S.R.	38.0	38.0	38	Lig	L	L	0	5	0	2	0	0	0		0								
7450.02	MEADOW LAKE - LONG LAKE F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	0	0	0	0		0							p	$1,500
7450.03	MEADOW LAKE - WEST F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0		0							p	$500
7450.04	MEADOW LAKE - CANOE F.S.R.	12.5	12.5	12.5	Lig	L	L	0	5	0	1	0	0	0		0								
7456.01	WILCOX LAKE - BRADLEY CREEK F.S.R.	28.0	28.0	28	Weld	L	L	0	5	0	2	0	0	0		0								
7456.02	WILCOX - TIMOTHY LAKE F.S.R.	9.0	9.0			L	H	0	0	0	0	0	1	0		0	9			$1,500			SP	$10,000
7456.03	WILCOX - DEMPSEY LAKE F.S.R.	9.5	9.5			L	M	1	1	0	2	0	0	0		0	9.5			$1,500				
7456.04	WILCOX - COFFEE EAST F.S.R.	5.9	5.9	5.9	Weld	L	L	0	1	0	2	0	0	0		0								
7456.05	WILCOX - COFFEE WEST F.S.R.	9.5	9.5	9.5	Weld	L	L	0	1	0	2	0	0	0		0								
7456.06	WILCOX - WESTMAN F.S.R.	4.0	4.0		SBFP	L	L	0	1	0	1	0	0	0		0	4			$2,000				
7456.07	WILCOX - BOAS F.S.R.	0.6	0.6		SBFP	L	L	0	0	0	0	0	0	0		0							sp	$500
7456.08	WILCOX - BEDINGFEILD LAKE F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0		0							sp	$500
7456.09	WILCOX - LANG F.S.R.	3.9	3.9		SBFP	L	L	0	0	0	2	0	0	0		0	3.9			$2,000				
7457.01	MAZE LAKE F.S.R.	10.8	10.8	10.8	River	M	M	2	2	0	2	0	0	0		0	10.8							
7457.02	MAZE - FORBES F.S.R.	17.7	17.7	17.7	Lig	M	M	4	2	0	4	0	0	0		0	17							
7457.03	MAZE - RAIL F.S.R.	10.6	10.6	8	Weld	L	L	0	1	0	3	0	0	0		0								
7464.01	HORSE - LAKE F.S.R.	18.0	18.0			L	L	0	2	0	0	0	0	0		0							SP	
7464.05	HORSE - FISET F.S.R.	7.9	7.9			L	L	0	1	0	0	0	0	0		0							SP	
7464.06	HORSE - QUINN F.S.R.	1.3	1.3			L	L	0	1	0	0	0	0	0		0							SP	
7464.07	HORSE - EARLE F.S.R.	1.3	1.3			L	M	0	0	0	0	0	1	0		0	1.3			$1,000				
7471.01	DREWRY LAKE F.S.R.	7.0	7.0	7	Ains	M	M	2	1	0	2	0	1	0		0	7			$1,500				
7471.02	DREWRY - WEBB F.S.R.	24.2	24.2	23.5	Ains	M	M	1	2	0	3	0	0	0		0	24			$2,000				
7471.03	DREWRY - TONGUE F.S.R.	2.8	2.8		SBFP	L	L	0	0	0	1	0	0	0		0	2.8			$1,500				
8106.01	GREENLEE LAKE F.S.R.	3.1	3.1			L	L	0	0	0	0	0	1	0		0		$60,000						
8122.01	FIFTYONE CREEK F.S.R.	3.5	3.5		SBFP	L	L	0	0	0	0	0	0	0		0							SP	$3,000
8276.01	VALENZUELA LAKE F.S.R.	2.5	2.5		SBFP	L	L	0	1	0	0	0	0	0		0							SP	$2,000
8276.02	VALENZUELA LAKE - NORTH F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0		0							P	$500
8277.01	DOUGHERTY LAKE F.S.R.	19.5	19.5		SBFP	L	L	0	2	0	3	0	0	0		0	18			$2,500		p km 18.0-19.5	p	$1,500
8277.02	DOUGHERTY LAKE - LOON F.S.R.	2.3	2.3		SBFP	L	L	0	1	0	1	0	0	0		0	2.3			$1,000				
8277.03	DOUGHERTY LAKE - SOUTH F.S.R.	2.0	2.0		SBFP	L	L	0	2	0	2	0	0	0		0	2			$1,000				
8277.04	DOUGHERTY LAKE - ILLAHEE F.S.R.	3.5	3.5		SBFP	L	L	0	0	0	1	0	0	0		0							sp	$3,000
8279.01	SEVENTY SIX MILE F.S.R.	3.1	3.1		SBFP	L	L	0	0	0	0	0	0	0		0							sp	$3,000
8279.02	SEVENTY SIX MILE - SOUTH F.S.R.	3.4	3.4		SBFP	L	L	0	0	0	0	0	0	0		0							sp	$3,000
8279.03	SEVENTY SIX MILE - NORTH F.S.R.	1.8	1.8		SBFP	L	L	0	0	0	0	0	0	0		0							sp	$2,000

Project #	Forest Service Road	Length road register	Length actual	Under permit	Priority	Risk	Residences	Commercial Use	Users & Access Needs First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Maintenance Activities Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures	Comments	Deactivation Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
8433.01	CLINTON CREEK F.S.R.	15.0	15.0	6	Ains	L	L	0	3	0	2	0	1	0	0	15			$2,500		Village watershed	SP	$10,000
8434.01	WAVEY LAKE F.S.R.	13.0	13.0	13	Ains	L	M	1	4	0	2	0	2	0	0	13	$65,000	y	$1,500	y	Fish blockage @ 6.5km		
8434.02	WAVEY LAKE - SNAG F.S.R.	11.0	11.0		SBFP	L	L	0	1	0	2	0	0	0	0	8			$4,000		sp km 8-10 p km 10-11	SP	$3,000
8610.01	BOSS CREEK F.S.R.	13.0	13.0	13	Weld	M	M	0	1	0	2	0	0	0	0	13			$2,500				
8610.02	BOSS - TERRACED F.S.R.	2.0	2.0			L	L	0	0	0	1	0	0	0	0								
8610.03	BOSS - BOOMERANG F.S.R.	9.8	9.8			L	M	0	1	0	2	0	0	0	0		$45,000	y	$2,500	y		SP	$15,000
8610.04	BOSS - CANIM F.S.R.	13.0	13.0			L	H	75 CABIN	2	1	2	0	1	0	0			y	$3,000				
8610.05	BOSS - NORTH F.S.R.	4.9	4.9		SBFP	L	L	0	1	0	1	0	0	0	0	4.9			$2,500				
8610.06	BOSS - WELLER F.S.R.	0.9	0.9		SBFP	L	L	0	0	0	1	0	0	0	0							SP	$1,000
8610.07	BOSS - EAST F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	0	0	0	0	0							SP	$1,500
8611.01	SPANISH CREEK F.S.R.	34.0	34.0	34	Weld	M	M	0	1	0	2	1	2	0	0								
8611.02	SPANISH - HOTFISH - ART CREEK F.S.R	3.7	3.7		SBFP	L	L	0	1	0	1	0	0	0	0	2.7	$35,000	y	$1,500	yes	Fish blockage @ 3.2 km	sp	$1,000
8611.03	SPANISH - PENDLETON F.S.R.	6.0	6.0			L	L	0	1	0	2	0	2	0	0				$1,500				
8611.04	SPANISH - DECEPTION F.S.R.	6.0	6.0			L	M	1	0	0	2	1	0	0	0	4			$1,500				
8611.05	SPANISH - PENDLETON SPUR 1 F.S.R.	3.5	3.5		SBFP	L	L	0	0	0	0	0	0	0	0							sp	$2,000
8611.06	SPANISH - PENDLETON SPUR 2 F.S.R.	1.8	1.8		SBFP	L	L	0	0	0	0	0	0	0	0							SP	$1,000
8611.07	SPANISH - NO NAME F.S.R.	21.8	21.8	21.8	Weld	L	M	0	1	0	2	1	1	0	0								
8611.08	SPANISH - NEIL CREEK F.S.R.	4.6	4.6		SBFP	L	L	0	1	0	2	0	0	0	0	4.6			$2,500				
8611.09	SPANISH - DECEPTION WEST F.S.R.	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0							sp	$1,000
8611.10	SPANISH - BURTT CREEK F.S.R.	6.1	6.1		SBFP	L	L	0	0	0	1	0	0	0	0	5.1			$2,500		sp km 5.1-6.1	sp	$1,000
8611.11	SPANISH - DECEPTION EAST F.S.R.	2.0	2.0		SBFP	L	L	0	1	0	1	0	0	0	0	2			$1,000				
8611.12	SPANISH - ART CREEK SOUTH F.S.R.	1.0	1.0		SBFP	L	L	0	1	0	1	0	0	0	0								
8611.13	SPANISH - BOUNDARY F.S.R.	3.4	0.9		SBFP	L	H	0	0	0	1	0	0	0	0	0.9			$1,000				
8611.14	SPANISH - DECEPTION SOUTH FSR	4.9	4.9		SBFP	L	L	0	1	0	1	0	0	0	0	3.9			$2,000		sp km 3.9-4.9	sp	$1,000
8611.15	SPANISH - NO NAME WEST F.S.R.	0.9	0.9		SBFP	L	M	0	0	0	1	0	0	0	0	0.9			$1,000				
8611.16	SPANISH - BURTT CREEK SPUR 1 F.S.R.	0.9	0.9		SBFP	L	L	0	0	0	1	0	0	0	0							sp	$1,000
8611.17	SPANISH - UPPER BURTT F.S.R.	4.5	1.5		SBFP	L	L	0	0	0	1	0	0	0	0	1.5					under construction		
8641.01	BERLICHINGEN CREEK F.S.R.	1.2	1.2			L	L	0	0	0	0	0	0	0	1						SP deact in 1995	SP	
8645.01	MORTON MEADOW F.S.R.	4.5	4.5		SBEP	L	L	0	0	0	1	0	0	0	0							SP	$10,000

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs							Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr		Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)				(y/n)			
8645.02	MORTON MEADOW - SPUR LEFT F.S.R.	1.0	1.0		SBEP	L	L	0	0	0	0	0	0	0	0							p- 1997	p	
8645.03	MORTON MEADOW - SPUR RIGHT F.S.R.	0.5	0.5		SBEP	L	L	0	0	0	0	0	0	0	0							p- 1997	P	
8645.04	MORTON MEADOW - TWO F.S.R.	0.7	0.7		SBEP	L	L	0	0	0	1	0	0	0	0								sp	$2,700
8645.06	MORTON MEADOW - NORTH F.S.R.	0.4	0.4		SBEP	L	L	0	0	0	0	0	0	0	0								P	$2,400
8645.07	MORTON MEADOW - SOUTH F.S.R.	2.4	2.4		SBEP	L	L	0	0	0	1	0	0	0	0							sp km 1.2-2.4	SP	$1,500
8645.08	MORTON MEADOW - RAIL LAKE F.S.R.	0.5	0.5		SBEP	L	L	0	0	0	1	0	0	0	0								sp	$2,500
8711.01	DEKA LAKE F.S.R.	1.0	1.0			L	M	1	0	0	0	0	0	0	0									
9141.01	BRIGADE CREEK F.S.R.	9.7	9.7	9.7	Ains	L	L	0	4	0	2	0	1	0	0									
9141.02	BRIGADE CREEK - EAST F.S.R.	5.5	5.5		SBFP	L	L	0	0	0	2	0	0	0	0	5.5			$2,500					
9141.03	BRIGADE CREEK - MOOSE CREEK F.S.R.	4.2	4.2		SBFP	L	L	0	0	0	1	0	0	0	0	4.2			$2,000					
9146.01	RAIL - MINE F.S.R.	24.0	24.0	10	Ains	L	L	0	3	0	2	1	0	0	0	15			$4,000			Culverts require insp		
9146.02	RAIL - MINE - NORTH F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	1	0	0	0	0								P	$1,997
9173.01	GOTCHEN LAKE F.S.R.	5.1	5.1		SBFP	L	M	1	1	0	1	0	0	0	0	4.1			$1,500			sp km 4.1-5.1	sp	$1,000
9173.02	GOTCHEN LAKE - WEST F.S.R.	4.5	4.5		SBFP	L	L	0	0	0	0	0	0	0	0	4.5			$2,000			proposed extension		
9173.03	GOTCHEN LAKE - MCKINLEY F.S.R.	2.1	2.1		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$2,000
9237.01	EIGHTY THREE MILE F.S.R.	3.0	3.0		SBFP	L	L	0	1	0	0	0	0	0	0				$1,500		yes	Listed on bridge replacement	SP	$2,000
9237.02	EIGHTY THREE MILE - WEST F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0	0								P	$500
9238.01	TAYLOR CREEK F.S.R.	4.0	4.0		SBFP	L	L	0	1	0	2	0	0	0	0	4			$2,000					
9238.02	TAYLOR CREEK - SOUTH F.S.R	0.6	0.6		SBFP	L	L	0	0	0	1	0	0	0	0							sp 1998	SP	
9238.03	TAYLOR CREEK - NORTH F.S.R	2.2	2.2		SBFP	L	L	0	0	0	1	0	0	0	0	2.2			$1,000					
9265.01	RUTH LAKE F.S.R	2.4	2.4		SBFP	L	L	0	0	0	1	0	0	0	0	2.4			$1,000					
9308.01	EDMUNDS LAKE F.S.R	8.8	8.8	8.8	Ains	L	L	0	1	0	2	0	0	0	0									
9375.01	SEVENTY FOUR MILE F.S.R.	2.0	2.0			L	L	0	0	0	0	0	0	0	0	2.5			$1,000			RESREACH PROJECT		
9375.02	SEVENTY FOUR MILE - EAST F.S.R.	1.3	1.3		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,500
9463.01	CAMPEAU CREEK F.S.R.	4.3	4.3		SBFP	L	M	1	1	0	1	0	0	0	0	4.3			$2,000					
9585.01	LONGBOW LAKE F.S.R.	6.4	6.4		SBFP	L	L	0	1	0	1	0	0	0	0	6			$3,000			sp km 6.0-6.4	SP	$500
9586.01	DUCKLING LAKE F.S.R.	4.5	4.5		SBFP	L	M	1	1	0	1	0	0	0	0	4.5			$2,000					
9586.02	DUCKLING - MARAIS F.S.R.	1.2	1.2		SBFP	L	L	0	0	0	1	0	0	0	0							sp 1997	sp	
9593.01	IRISH LAKE F.S.R.	2.3	2.3			L	L	0	0	0	0	0	1	0	0	1			$1,000					
9616.01	HUTCHISON F.S.R.	1.2	1.2		SBFP	L	L	0	0	0	1	0	0	0	0								SP	$1,200
9616.02	HUTCHISON - F.S.R.	0.6	0.6		SBFP	L	L	0	1	0	1	0	0	0	0	0.6			$500					
9616.03	HUTCHISON - F.S.R.	3.1	3.1		SBFP	L	L	0	0	0	1	0	0	0	0	1.5			$1,000			sp km1.5-3.1	SP	$1,500
9616.04	HUTCHINSON - EAST F.S.R.	2.1	2.1		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$2,000

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
9637.01	WALMITH LAKE F.S.R.	6.2	6.2			L	L	0	1	0	1	0	0	0	0				$1,000			SP	
9677.01	SIMMONS CREEK F.S.R.	5.1	3.0		SBFP	L	L	0	1	0	0	0	0	0	0	1.5			$1,000				
9677.02	SIMMONS CREEK - NORTH F.S.R.	0.3	0.3		SBFP	L	L	0	0	0	1	0	0	0	0						sp-1999	SP	
9720.01	NINETY MILE F.S.R.	0.3	0.3			L	L	0	0	0	0	0	0	0	0						TRANFER TO AINS ROAD PERMIT		
9756.01	WOHLLEBEN CREEK F.S.R.	11.9	11.9		SBFP	L	L	0	0	0	1	0	0	0	0	11.9			$5,000				
9802.01	NINETYFOUR MILE F.S.R.	5.5	5.5		SBFP	L	L	0	0	0	1	0	0	0	0	5.5			$2,500				
9802.02	NINETYFOUR MILE F.S.R.	2.5	2.5		SBFP	L	L	0	0	0	1	0	0	0	0	2.5			$1,000				
9815.01	ORREN CREEK F.S.R.	4.6	4.6		SBFP	L	L	0	0	0	1	0	0	0	0	3			$1,500		sp km 3.0 - 4.6	sp	$1,500
9815.02	ORREN CREEK - NORTH F.S.R.	0.6	0.6		SBFP	L	L	0	0	0	0	0	0	0	0							SP	$1,000
9834.01	STINSON CREEK F.S.R.	2.2	2.2		SBFP	L	L	0	0	0	1	0	0	0	0	2.2			$1,500				
9862.01	ELK LAKE F.S.R.	11.4	11.4		SBFP	L	L	0	1	0	1	0	0	0	0	9			$4,500		sp km 9 - 11.4	sp	$2,500
9872.01	LONE BUTTE F.S.R.	2.0	2.0		SBFP	L	L	0	0	0	1	0	0	0	0	2			$1,000				
9897.01	61 MILE F.S.R.	1.3	1.3		SBFP	L	L	0	1	0	1	0	0	0	0	1.3			$500				
9906.01	SCOT CREEK F.S.R.	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0						Prop. Reconstruction 2000		
9906.02	SCOT CREEK - WEST F.S.R.	2.3	2.3		SBFP	L	L	0	0	0	0	0	0	0	0						Prop. Reconstruction 2000		
9906.03	SCOT CREEK - SPUR 1 F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0	0						Prop. Reconstruction 2000		
9906.04	SCOT CREEK - SOUTH F.S.R.	1.6	1.6		SBFP	L	L	0	0	0	0	0	0	0	0						Prop. Reconstruction 2000		
9907.01	SUTHERLAND LAKE F.S.R.	3.1	3.1		SBFP	L	L	0	1	0	1	0	0	0	0	3.1			$1,500		Further Construction 2000		
9908.01	INTERLAKES F.S.R.	2.8	2.8		SBFP	L	L	0	0	0	1	0	0	0	0	2.8			$1,500				
9909.01	JEEP LAKE F.S.R.	8.7	8.7		SBFP	L	L	0	1	0	1	0	0	0	0	8.7			$4,000				
9909.02	JEEP LAKE - SPUR #1 F.S.R.	0.7	0.7		SBFP	L	L	0	0	0	1	0	0	0	0	0.7			$500				
	Totals	1406.7	1390.2	671.3				44								658.2	$325,000		$185,800				$207,792

Chilcotin Forest District

Project #	Forest Service Road	road register	Length actual	Under permit	Priority	Risk	Residences	Commercial Use	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
									First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
4407.01	TATLAYOKO LAKE F.S.R.	28	28		h	1	6	2	12		4-9	1	1	1	5				4000		seas drain		
4633.01	ANAH LAKE F.S.R.	21	21	8	h	1	12	12	12	4-9		1	1	1	5		y	fish	6000		ditch stab		
4633.02	ANAH LAKE - BEAVER TRAIL F.S.R.	8	8		l	3																	
4953.01	ELKIN - TASEKO LAKE F.S.R.	20	20		m	1	12	4-9	12			1											
4953.02	ELKIN - VEDAN F.S.R.	10	10		l	3							1				y	fish	5000		beav stop		
5265.01	ALEX GRAHAM - ANAHIM CREEK F.S.R.	32	32		h	3	6					1		1	6		y	fish	8000		beav stop		
5265.02	ALEX GRAHAM - PALMER LAKE F.S.R.	80	80	60	h	1	10	4-9	12					1	4		y	fish	8000		beav stop		
5265.03	ALEX GRAHAM - L/O ACCESS FSR	23	23	8	h	2		4-6	4-9														
5265.05	ALEX GRAHAM - ZENZACO F.S.R.	24	24		m	2	1	4-9														P	5000
5265.07	ALEX GRAHAM - GOERING CREEK F.S.R.	75	75	18	m	2	1		4-9														
5265.08	ALEX GRAHAM - S. ANAHIM CR F.S.R	6	6		l	3									5		y		10000		remov brg		
5265.09	ALEX GRAHAM - ANAHIM CENTRAL F.S.R.	5	5		m	3																	
5265.17	ALEX GRAHAM - ANAHIM NORTH F.S.R.	5	5		l	3																	
5265.18	ALEX GRAHAM - ANAHIM SOUTH F.S.R.	8	8		l	3																	
5475.01	CHILANKO FORKS L/O F.S.R.	12	12	6	h	1		4-9	12	4-9													
5475.02	CHILANKO - EAST F.S.R.	2	2		l	3																	
5475.05	CHILANKO - TATLA CREEK F.S.R.	5	5		l	3																	
5475.06	CHILANKO - MAIN F.S.R.	26	26	6	m	2	1	4-9		4-9					3				6000		maj drain		
5475.07	CHILANKO - FIT MOUNTAIN F.S.R.	11	11		l	3																	
5475.08	CHILANKO - WEST F.S.R.	5	5		l	3																	
5475.09	CHILANKO - SOUTH F.S.R.	4	4		l	3																	
5475.10	CHILANKO - EAST F.S.R.	2	2		l	3																	
6252.01	CHILKO LAKE F.S.R.	26	26		h	2	4	4-9	12			1		1	8		y	fish	8000		maj drain		
7356.01	CLUSKO RIVER - THUNDER MTN. F.S.R.	30	30		h	2	6	12	12			1	1	1	10			fish	5000		stab appro		
7356.04	CLUSKO RIVER - ANEKO F.S.R.	93	93	36	h	1	4	12	12	4-9			1	1	9		y	fish	36000		8m bridge	SP	3000
7356.05	CLUSKO RIVER - ALEXIS MTN. F.S.R.	16	16	12	h	2	2	4-9							2								
7356.06	CLUSKO RIVER - ROSS CREEK F.S.R.	22	22		h	3											y	fish	10000		mini span		
7356.07	CLUSKO RIVER - TZAZATI F.S.R.	68	68		h	1	1	12	12					1	8		y	fish	6000		beav stop	SP	3000

Project #	Forest Service Road	Length			Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
7356.08	CLUSKO RIVER - BROWN CREEK F.S.R.	16	16		h	1	1	12	12						4		y	fish	36000		8m bridge		
7356.09	CLUSKO RIVER - HORSEHOOF CR. F.S.R.	17	17		l	3																	
7356.10	CLUSKO RIVER-CHILCOTIN RIVER F.S.R.	24	24		l	3																	
7356.11	CLUSKO RIVER - SUMMIT F.S.R.	2	2		l	3																	
7356.12	CLUSKO RIVER - CLISBAKO	3	3		m	3			12													SP	3000
7356.13	CLUSKO RIVER - TZAZATI WEST F.S.R.	6	6		l	3																	
7356.15	CLUSKO RIVER - ALEXIS LAKES F.S.R.	4	4		l	3																	
7356.16	CLUSKO RIVER - JANKEY CREEK F.S.R.	6	6		l	3																	
7356.17	CLUSKO RIVER - BROWN EAST F.S.R.	12	12		h	3											y	fish	5000		beav stop		
7356.18	CLUSKO RIVER - NAZKO F.S.R.	2	2		l	3																	
7356.20	CLUSKO RIVER - BIDDY CREEK F.S.R.	2	2		l	3																	
7356.21	CLUSKO RIVER - SPARROW HAWK F.S.R.	1	1		l	3																	
7356.22	CLUSKO RIVER - BAYLIFF LAKE F.S.R.	15	15		l	3																	
7356.23	CLUSKO RIVER - BAYLIFF CREEK F.S.R.	5	5		l	3																	
7356.24	CLUSKO RIVER - ENGLEBERT NORTH FSR	12	12		l	3																	
7356.25	CLUSKO RIVER - EAST ENGLEBERT F.S.R	1	1		l	3																	
7356.26	CLUSKO RIVER - BELL CREEK F.S.R.	8	8		l	3																	
7356.27	CLUSKO RIVER - ANEK0 WEST F.S.R.	8	8		l	3																	
7356.28	CLUSKO RIVER - SPENCER F.S.R.	5	5		l	3																	
7356.29	CLUSKO RIVER - ANEKO NORTH F.S.R.	6	6		l	3																	
7356.30	CLUSKO RIVER - CHEVY F.S.R.	4	4		l	3																	
7365.01	PUNTI LAKE F.S.R. SEC. A & B	8	8		l	3																	
7365.02	PUNTI LAKE F.S.R.	6	6		l	3																	
7365.03	PUNTI LAKE F.S.R.	1	1		l	3																	

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	Under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	First Nations (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (km)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
7629.01	RED TOP MOUNTAIN F.S.R.	4	4		l	3																	
7629.02	RED TOP MT. PUNTZI AIRFIELD F.S.R.	6	6		h	1		4-9	12						5		y		4000		ditch stab		
7629.03	RED TOP Mt. JORGENSEN CR F.S.R	8	8	2	l	3																	
7651.01	MOSLEY CREEK F.S.R.	21	21		h	1	12				4-9	1	1		10		y		5000		ditch stab		
7980.01	ONE EYE LOOKOUT F.S.R.	13	13		m	3			12								y		5000		ditch stab		
8062.01	MINTON CREEK F.S.R.	14	14		m	3			12								y		5000		ditch stab		
8482.01	TSUH LAKE F.S.R.	16	16		l	3			12														
8644.01	NEWTON EAST F.S.R.	4	4		m	3									4		y		5000		ditch stab		
8653.01	HOLTRY CREEK F.S.R.	50	50		h	1	8	12					1		8				4000		ditch stab		
8876.01	TASEKO RIVER F.S.R.	8	8		l	3																	
8876.02	TASEKO RIVER - WEST F.S.R.	8	8		l	3																	
9002.01	REDSTONE F.S.R.	13	13		m	2		4-9	12										3000		ditch stab		
9002.02	REDSTONE - MARSH F.S.R.	3	3		l	3																	
9002.03	REDSTONE - CHILANKO F.S.R.	1	1		l	3																	
9002.04	REDSTONE - NORTH F.S.R.	1	1		l	3																	
9002.05	REDSTONE - SOUTH F.S.R.	2	2		l	3																	
9002.06	REDSTONE - BLUFF F.S.R.	4	4		l	3																	
9002.07	REDSTONE - CANYON F.S.R.	1	1		l	3																	
9002.08	REDSTONE - BIDWELL F.S.R.	1	1		l	3																	
9017.01	SALT LAKE F.S.R.	14	14	6	m	3		4-9	12								y		3000		ditch stab		
9017.02	SALT LAKE - NORTH EAST F.S.R.	5	5		l	3																	
9017.03	SALT LAKE - NORTH WEST F.S.R.	1	1		l	3																	
9107.01	NEWTON WEST F.S.R.	6	6		l	2											y		3000		ditch / drain		
9126.01	KAPPAN MOUNTAIN F.S.R.	8	8		m	3		4-9	12			1											
9156.01	SISTERS HILLS F.S.R.	14	14		h	2	2	4-9	12						8		y		4000		ditch / drain		
9156.02	SISTERS - SOUTH F.S.R.	2	2		l	3																	
9156.03	SISTERS - SHORT F.S.R.	2	2		l	3																	
9156.04	SISTERS - WEST F.S.R.	2	2		l	3																	
9156.05	SISTERS - EAST F.S.R.	4	4		l	3																	
9156.06	SISTERS - NORTH F.S.R.	6	6		l	3																	
9156.07	SISTERS - CHILC F.S.R.	2	2		l	3																	
9156.08	SISTERS - PLOVER F.S.R.	4	4		l	3																	
9156.09	SISTERS - MT. ALEXIS F.S.R.	6	6		m	2																	
9156.10	SISTERS - GEMS F.S.R.	3	3		l	3																	
9156.11	SISTERS - CURVE F.S.R.	1	1		l	3																	
9156.12	SISTERS - PEAK F.S.R.	3	3		l	3																	
9156.13	SISTERS - KANE F.S.R.	2	2		l	3																	
9156.14	SISTERS - MOUSE F.S.R.	5	5		l	3																	
9156.15	SISTERS -DEER	5	5		m	3																	

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
9156.16	SISTERS-HOOF	5	5		l	3																	
9157.01	SMOKEY LAKE F.S.R.	45	45	22	h	1	4	4-9	12	4-9					16				4000		ditch / drain		
9157.02	SMOKEY LAKE - SUCKER CREEK F.S.R	4	4		m	2																	
9157.03	SMOKEY LAKE - LONG LAKE F.S.R.	9	9		l	3																	
9157.04	SMOKEY LAKE - CARIBOO FLATS F.S.R.	5	5		l	3																	
9157.05	SMOKEY LAKE - CASCADE F.S.R.	2	2		l	3																	
9157.06	SMOKEY LAKE - RANGER F.S.R.	8	8		l	2																	
9157.07	SMOKEY LAKE - LOOKOUT F.S.R.	8	8		l	2																	
9157.08	SMOKEY LAKE - LOOKOUTARM F.S.R.	1	1		l	3																	
9157.09	SMOKEY LAKE - RICHBERG F.S.R.	4	4		l	3																	
9157.10	SMOKEY LAKE - GOAT F.S.R.	4	4		l	2																	
9157.12	SMOKEY LAKE - RANGER SOUTH F.S.R.	2	2		l	2																	
9157.13	SMOKEY LAKE - RANGER WEST F.S.R.	6	6		l	3																	
9157.17	SMOKEY LAKE - KLINAKLINA F.S.R.	9	9		l	3																	
9157.21	SMOKEY LAKE - RICHBURG F.S.R.	12	12		h	1	1	4-9							4								
9157.23	SMOKEY LAKE - AKTAKLIN F.S.R.	10	10		l	3																	
9157.24	SMOKEY LAKE - LONG EAST F.S.R.	6	6		l	3																	
9164.01	HECKMAN F.S.R.	2	2		m	2																	
9165.01	TUSULKO RIVER NORTH F.S.R.	5	5		l	3																	
9166.01	TUSULKO RIVER SOUTH F.S.R.	6	6		l	3																	
9166.02	TUSULKO RIVER-ABUNTLET F.S.R.	6	6		l	3																	
9167.01	FLETCHER LAKE F.S.R.	8	8		l	3		4-9	12														
9167.02	FLETCHER LAKE - RUSHES F.S.R.	3	3		l	2											y		5000		beav stop		
9167.03	FLETCHER LAKE - WEST F.S.R.	4	4		l	3																	
9167.04	FLETCHER LAKE - BOUNDARY F.S.R.	5	5		l	3																	
9167.05	FLETCHER LAKE - NORTH F.S.R.	3	3		l	3																	
9175.01	MINER LAKE F.S.R.	28	28	8	h	1		4-9	4-9	4-9	4-9	1			6		y		32000	y	6m bridge		
9175.02	MINER LAKE - WEST F.S.R.	6	6		l	2																	
9175.03	MINER LAKE - EAST F.S.R.	4	4		l	2																	
9175.04	MINER LAKE - PATTERSON F.S.R.	2	2		l	2																	
9175.05	HALFWAY SOUTH FSR	28	28	28	h	1		4-9	12														
9176.01	KLYUL LAKE SOUTH F.S.R.	5	5	5	m	3		4-9	12														
9176.02	KLIYUL LAKE SOUTH - TASEKO F.S.R.	3	3		l	3																	

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
9215.01	LEES LOOKOUT F.S.R.	4	4		l	2																	
9245.01	FISH LAKE F.S.R.	14	14	6	h	3		4-9	12			1											
9332.01	TEMAPHO SEISMIC F.S.R.	2	2		l	3																	
9334.01	DUSTY LAKE F.S.R.	23	23	8	h	2	4	4-9	12						6				5000		ditch / drain		
9334.02	DUSTY LAKE - HEADWATERS F.S.R.	3	3	3	l	3																	
9334.03	DUSTY - AKTAKLIN F.S.R.	5	5	5	l	2																	
9334.04	DUSTY - NORTH	3	3		l	3																	
9334.05	DUSTY - EAST	7	7		l	2																	
9334.06	DUSTY - SUE	5	5		l	3																	
9334.07	DUSTY LAKE - DEAN F.S.R.	8	8		l	3																	
9334.08	DUSTY - KNOB	5	5		l	2																	
9376.01	TEMAPHO LAKE F.S.R.	14	14	6	l	3																	
9443.01	HOOCH LAKE F.S.R.	14	14		h	2	2	4-9	12								y		7000		ditch / drain		
9443.02	HOOCH LAKE - TOWDYSTAN F.S.R.	2	2		l	3																	
9443.03	HOOCH LAKE - GANO NORTH F.S.R.	4	4		m	3																	
9443.04	HOOCH LAKE - EAST F.S.R.	1	1		l	2																	
9443.05	HOOCH LAKE - GAN0 SOUTH F.S.R.	1	1		l	3																	
9443.06	HOOCH LAKE - PETE EAST F.S.R.	1	1		l	3																	
9443.07	HOOCH LAKE - PETE WEST F.S.R.	1	1		l	2																	
9443.08	HOOCH LAKE - WEST MCCLINCHY F.S.R.	4	4		m	3																	
9443.09	HOOCH LAKE - EAST MCCLINCHY F.S.R.	2	2		l	3																	
9443.10	HOOCH LAKE - LITTLE MCCLINCHY F.S.R	2	2		l	3																	
9443.11	HOOCH LAKE - MCCLINCHY NW F.S.R	2	2		l	3																	
9443.12	HOOCH LAKE - MCCLINCHY NE F.S.R	1	1		l	3																	
9443.13	HOOCH LAKE - MCLINCHY SOUTH F.S.R.	3	3		l	2																	
9443.14	HOOCH LAKE - CHARLOTTE LAKE F.S.R.	9	9		h	2	16					1							5000		ditch / drain		
9449.01	MCDERMOTT CREEK F.S.R.	5	5		l	2																	
9450.01	CHILCOTIN RIVER F.S.R.	22	22		h	1	4							1					5000		ditch / drain		
9450.02	CHILCOTIN RIVER - REDSTONE F.S.R.	10	10		l	2																	
9450.03	CHILCOTIN RIVER - RIM F.S.R.	3	3		l	2																	
9451.01	PUNTI LAKE F.S.R.	11	11		l	2	8	4-9	12														

Project #	Forest Service Road		Length		Priority	Risk			Users & Access Needs						Maintenance Activities						Comments	Deactivation	
		road register	actual	Under permit			Residences	Commercial Use	First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr	Major Structures		Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
9451.02	PUNTI LAKE - WEST F.S.R.	7	7		l	2																	
9451.03	PUNTI LAKE - EAST F.S.R.	3	3		l	2																	
9451.04	PUNTI - SOUTH F.S.R.	6	6		l	3																	
9452.01	BIDWELL LAKES F.S.R.	24	24		m	2	4	4-9	12														
9452.02	BIDWELL LAKES - MOUNTAIN F.S.R.	6	6		l	3																	
9452.03	BIDWELL LAKES - NORTH F.S.R.	4	4		l	3																	
9452.04	BIDWELL LAKES - F.S.R.	7	7		l	3																	
9452.05	BIDWELL LAKES - F.S.R.	4	4		l	3																	
9452.06	BIDWELL LAKES - F.S.R.	16	16		l	3																	
9452.07	BIDWEEL LAKES - F.S.R.	6	6		l	2																	
9453.01	PUNTZI F.S.R.	12	12		h	1	8	12									y		3000		ditch / drain		
9453.02	PUNTZI LAKE - CHANTSLAR F.S.R.	24	24	12	h	1	2	4-9		4-9							y		3000		ditch / drain		
9453.03	PUNTZI LAKE - F.S.R.	10	10		l	2																	
9453.04	PUNTZI LAKE - F.S.R.	6	6		l	2																	
9454.01	BIG STICK F.S.R.	19	19	6	m	2	2	4-9	12			1	1				y		4000		ditch / drain		
9454.02	BIG STICK - BLOCK F.S.R.	2	2		l	2																	
9454.03	BIG STICK - McCLINCHY F.S.R.	4	4		l	3																	
9454.04	BIG STICK - LOOP F.S.R.	4	4		l	2																	
9455.01	PYPER LAKE F.S.R.	24	24		l	3																	
9455.02	PYPER LAKE - WEST F.S.R.	12	12		l	3	4	4-9	12														
9456.01	CARIBOU FLATS F.S.R.	13	13		m	2		4-9		4-9												SP	5000
9456.02	CARIBOU - NORTH F.S.R.	1	1		l	2																	
9456.03	CARIBOU - EAST F.S.R.	1	1		l	3																	
9456.04	CARIBOU - SOUTH F.S.R.	1	1		l	2																	
9456.05	CARIBOU - MCCLINCHY SOUTH F.S.R.	1	1		l	2																	
9456.06	CARIBOU - F.S.R.	6	6		l	2																	
9457.01	ONE EYE LAKE F.S.R.	4	4		m	2						1					y		3000		ditch / drain		
9458.01	TATLA LAKE F.S.R.	4	4		l	3						1											
9459.01	TWO LAKES F.S.R.	1	1		l	3						1											
9460.01	ALEXIS LAKE F.S.R.	3	3		l	2						1											
9462.01	SAPEYE F.S.R.	4	4		h	1	6	4-9	12			1			y		y		6000		ditch / drain		
9539.01	ABUNTLET LAKE F.S.R.	3	3		l	2																	
9757.01	ANEKO CREEK F.S.R.	2	2		l	2																	
9765.01	KLINAKLIN RIVER F.S.R.	2	2		l	2																	
9766.01	TETE ANGLES CREEK F.S.R.	3	3		l	2																	
9767.01	PUNTZI CREEK F.S.R.	5	5		l	2																	
9768.01	SUCKER LAKE F.S.R.	4	4		l	2																	
9870.01	BEEF TRAIL F.S.R.	1	1		m	2																	
9871.01	BEEF TRAIL - SOUTH F.S.R.	2	2		l	2																	

Project #	Forest Service Road	Length		Under permit	Priority	Risk	Residences	Commercial Use	Users & Access Needs						Maintenance Activities					Major Structures	Comments	Deactivation	
		road register	actual						First Nations	Licensees Use	Mining Use	Rec Sites	School Access	Parks Access	Routine Maint	dust control	culvert replace	other	cost/yr			Type (SP or P)	Cost
		(km)	(km)	(km)	(H/M/L)	(H/M/L)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(#)	(km)	($)	(y/n)			(y/n)			
9896.01	TETE ANGELA SOUTH F.S.R.	2	2		l	2																	
9896.01	TETE ANGELA SOUTH - BRANCH 2 F.S.R.	4	4		l	2																	
9896.03	TETE ANGELA SOUTH - BRANCH 3 F.S.R.	10	10		l	2																	

RESOURCE MANAGEMENT PLAN - ENGINEERING PROGRAM

FOR YEAR 2001/2002

CARIBOO FOREST REGION

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS	ESTIMATED COSTS				TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
					BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $				
Fixed Costs (region $):												
Right-of-way acquisition	*40802*	H	NO.		0	0	0		0			
emergency repairs	*40803*	H	NO.		115000	115000	0		115000			
inspection of bridges/major culverts	*40804*	H	NO.		25000	140000	0		25000			
railway crossing maint.	*40805*	H	NO.	1	3500	143500	0		3500			
subtotal					143500		0		143500			
Surface Maintenance +	*40805*	H	KM	362	94500	238000	0	0	94500			
Non Modification Repairs		M	KM	858	87500	325500		0	87500			
(e.g., grading, brushing, cross drain		L	KM	810	92900	418400		0	92900			
culvert repairs, ditch cleanout, bridge												
deck cleaning and repair, road surfacing)												
subtotal					274900		0		274900			
Modification-Bridge and	*40806*	H	NO.	7	515000	933400	0	0	515000			
Major Culvert Replacement	*or*	M	NO.	4	104000	1037400		0	104000			
(needs road layout and design)	*40812*	L	NO.	0	0	1037400		0	0			
subtotal					619000		0		619000			
Modification-Other Works	*40807*	H	NO.	35	202000	1239400	0	0	202000			
(needs road layout and design)		M	NO.	8	270000	1509400		0	270000			
(e.g., road relocation, stream		L	NO.	0	0	1509400		0	0			
culvert replacement, road												
stability repair)												
subtotal					472000		0		472000			
Road Deactivation	*40808*	H	KM	19	76000	76000	0	0	76000			
		M	KM	0	8000	84000		0	8000			
		L	KM	0	0	84000		0	0			
subtotal					84000		0		84000			
TOTAL					1593400		0		1593400			

Forest Service Road & Bridge Components

Forest District Activities--Engineering Program

FOR YEAR 2001/2002 Cariboo Forest Region

ACTIVITY	ACCOUNT	PRIORITY													
			Region	Quesnel		Williams Lake		Horsefly		100 Mile		Chilcotin		Regional Requirements	
Fixed Costs (region $):			$	$	Goals	$	Goals	$	Goals	$	Goals	$	Goals		
Right-of-way acquisition	*40802*	H												0	0
emergency repairs	*40803*	H		30000		10000		35000		20000		20000		115000	0
inspection of bridges/major	*40804*	H	25000											25000	0
railway crossing maint.	*40805*	H								3500	1			3500	0
Surface Maintenance	*40805*	H	35000			25500	70	14000	290			20000	2	94500	362
		M		45000	490	3500	10	12000	180	27000	178			87500	858
(e.g., grading, brushing, ditch cleanout, bridge deck cleaning and repair)		L		17000	470	30900	115	25000	110	20000	115			92900	810
Modification-Bridge and Major Culvert Replacement	*40806*	H		155000	3	300000	3			60000	1			515000	7
		M										104000	4	104000	4
		L												0	0
Modification-Other Works	*40807*	H	25000					45000	3			132000	32	202000	35
		M						35000	2	195000	6	40000		270000	8
(e.g., road relocation, stream culvert replacement, road stability repair)		L												0	0
Road Deactivation	*40808*	H	15000	50000	2			0		0		11000	17	76000	19
		M										8000		8000	0
		L												0	
TOTAL			$ 100,000	$ 297,000		$ 369,900		$ 166,000		$ 325,500		$ 335,000		$ 1,593,400	

Quesnel

Project #	Forest Service Road	Length			Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under rd. prmt (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	First Nations (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (km)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
7678.01	CUNNINGHAM PASS F.S.R.	59	59	59	M	M	3	1	0	2	5	1	0	2	59	0	y	np	10000	y	Licencee Vacating		
5823.04	TZENZAICUT - WEIER F.S.R.	30.1	30.1	30.1	H	H	1	1	0	5	0	1	0	0	30.1	0	y	np	150000	y	Log culvert Replacement		
4017.	MILBURN MTN. L/O & REP. SITE	8.6	8.6	0	L	L	0	0	0	0	0	0	0	0	8.6	0	n	np	2000	n	np=none planned		
5464.03	NYLAND LAKE - SUNBERG F.S.R.	27	27	6	L	L	1	1	0	1	2	1	0	0	27	0	y	np	n/a	y	SB Built		
5464.04	NYLAND LAKE - FORKS CREEK F.S.F	2.1	2.1	0	L	L	0	0	0	0	2	0	0	0	2.1	0	y	np	1000	n	SB Built		
5464.05	NYLAND LAKE - MAUDE CREEK F.S.I	2	2	0	L	L	0	0	0	0	0	0	0	0	2	0	y	np	1000	n	SB Built		
5823.08	TZENZAICUT - NARCOSLI SOUTH F.S	9.5	9.5	9.5	L	L	1	1	0	2	0	0	0	0	9.5	0	y	np	2500	y	SB Built		
5823.09	TZENZAICUT - RAMSEY EAST F.S.R.	5.5	5.5		L	L	0	0	0	1	0	0	0	0	5.5	0	y	np	2000	n	SB Built		
5823.10	TZENZAICUT - SOUTH RAMSEY F.S.I	10.5	10.5	6	L	L	1	1	0	1	0	0	0	0	10.5	0	y	np	4000	y	SB Built		
7672.15	MICHELLE - MORRIS F.S.R.	12.5	12.5	0	L	L	0	0	0	0	0	0	0	0	12.5	0	n	np	n/a	n	SB Built	P	98/99
7674.02	SWEDE CREEK - MARCEL F.S.R.	3	3	0	L	L	0	0	0	0	0	0	0	0	3	0	n	np	500	n	SB Built		
7683.03	KETCHAM CR. - YUZKLI F.S.R	9.6	9.6	0	L	L	0	0	0	1	0	0	0	0	9.6	0	y	np	3000	n	SB Built		
7683.04	KETCHUM CR. - YUZKLI - EAST F.S.F	2.6	2.6	0	L	L	0	0	0	0	0	0	0	0	2.6	0	y	np	2500	n	SB Built		
7683.07	KETCHAM CREEK - YUZKLI CREEK F	2.1	2.1	0	L	L	0	0	0	0	0	0	0	0	2.1	0	y	np	500	n	SB Built		
7683.08	KETCHAM CR-YUZKLI CR-BIG FIR F.S	0.9	0.9	0	L	L	0	0	0	0	0	0	0	0	0.9	0	y	np	500	n	SB Built		
7744.02	JAMES MOUNTAIN - ALIX CREEK F.S	9.6	9.6	9.6	L	L	0	0	0	6	1	0	0	0	9.6	0	y	np	500	n	SB Built		
7744.05	JAMES MOUNTAIN - AUSTRALIAN CF	1.4	1.4	0	L	L	0	0	0	5	0	0	0	0	1.4	0	y	np	500	n	SB Built		
7744.06	JAMES MOUNTAIN- ALIX CR. NORTH	3.4	3.4	3.4	L	L	0	0	0	5	0	0	0	0	3.4	0	y	np	n/a	n	SB Built		
8285.01	CLISBAKO MOUTH F.S.R.	10.9	10.9	0	L	L	0	0	0	0	0	0	0	0	10.9	0	y	np	2000	y	SB Built		
8285.02	CLISBAKO MOUTH - SOUTH F.S.R.	1.1	1.1	0	L	L	0	0	0	0	0	0	0	0	1.1	0	n	np	n/a	n	SB Built	P	99/2000
8285.03	CLISBAKO MOUTH - BROWN F.S.R.	19.2	19.2	0	L	L	0	0	0	0	0	0	0	0	19.2	0	y	np	4000	n	SB Built		
8285.04	CLISBAKO MOUTH - EAST F.S.R.	8.7	8.7	0	L	L	0	0	0	0	0	0	0	0	8.7	0	y	np	2000	n	SB Built		
8374.01	BROWN CREEK F.S.R.	10.1	10.1	0	L	L	0	0	0	2	0	0	0	0	10.1	0	y	np	4000	n	SB Built		
8858.01	CHARLESON CREEK F.S.R.	13	13	8	L	L	1	1	0	2	2	0	0	0	13	0	y	np	2500	y	SB Built		
9351.01	TIBBLES NORTH F.S.R.	9.9	9.9	0	L	L	0	0	0	0	0	0	0	0	9.9	0	y	np	5000	n	SB Built		
5073.08	SWIFT - MCMARTIN F.S.R.	2.9	2.9	0	M	M	0	0	0	1	2	0	0	0	2.9	0	y	np	2000	n	SB Built		
5073.09	SWIFT RIVER - MERIDAN CREEK F.S	4.1	4.1	0	M	M	0	0	0	1	0	0	0	0	4.1	0	y	np	3000	y	SB Built		
5073.10	SWIFT RIVER - MERIDIAN SOUTH F.S	3.2	3.2	0	M	M	0	0	0	0	0	0	0	0	3.2	0	y	np	2000	y	SB Built		
5073.12	SWIFT - BREAKNECK RIDGE F.S.R.	3.6	3.6	0	M	M	0	0	0	0	1	0	0	0	3.6	0	y	np	1000	n	SB Built		
5073.13	SWIFT - RABBIT CREEK F.S.R.	2.2	2.2	2.2	M	M	0	0	0	1	0	0	0	0	2.2	0	y	np	2000	n	SB Built		
5073.14	SWIFT - RABBIT CREEK SOUTH F.S.I	0.6	0.6	0.6	M	M	0	0	0	0	0	0	0	0	0.6	0	y	np	1000	n	SB Built		
7678.04	CUNNINGHAM - NOLAKA CREEK F.S	9.8	9.8	9.8	M	M	0	0	0	1	0	0	0	0	9.8	0	y	np	10000	y	SB Built		
7678.05	CUNNINGHAM - LOSTWAY CREEK F.	4.6	4.6	0	M	M	0	0	0	1	0	0	0	0	4.6	0	y	np	5000	n	SB Built		
7678.06	CUNNINGHAM - LOSTWAY SOUTH F	1.9	1.9	0	M	M	0	0	0	1	0	0	0	0	1.9	0	y	np	2000	n	SB Built		
7678.07	CUNNINGHAM - SIXBEE F.S.R.	1.7	1.7	0	M	M	0	0	0	0	0	0	0	0	1.7	0	y	np	1000	n	SB Built		
7683.05	KETCHAM CREEK - WILLOW RIVER I	5	5	0	M	M	0	0	0	1	1	0	0	0	5	0	y	np	1000	y	SB Built	P	00/01
7683.06	KETCHAM CREEK - JULIUS CREEK F	1.5	1.5	0	M	M	0	0	0	1	0	0	0	0	1.5	0	y	np	1000	n	SB Built	P	99/2000
8370.01	NAZKO FALLS F.S.R.	15	15	1	M	M	0	0	0	2	0	0	0	1	15	0	y	np	6000	y	SB Built		
8801.01	JACK OF CLUBS F.S.R.	5	5	0	M	M	0	0	0	1	2	0	0	0	5	0	y	np	4500	y	SB Built		

8844.01	LIGHTNING CREEK F.S.R.	3.8	3.8	0	M	M	1	1	0	1	3	0	0	0	3.8	0	y	np		3800	y	SB Built		
9936.01	HILL LAKE F.S.R.	8.5	8.5	8.5	M	M	0	0	0	3	0	0	0	0	8.5	0	y	np		8500	n	SB Built		
5073.11	SWIFT RIVER - MERIDIAN MOUNTIAI	6.8	6.5	0	M	M	0	0	0	0	0	0	0	0	6.8	0	y	np		2000	n	SB Built - Deact 300m	P	
5823.02	TZENZAICUT - RAMSEY F.S.R.	19.8	19.8	19.8	L	L	3	0	0	5	0	1	0	0	19.8	0	y	np		4000	y	Snow Plowing		
4795.01	JORDAN CREEK - GOOSE LAKE F.S.	6	6	6	L	L	0	0	0	1	0	0	0	0	6	0	y	np	n/a		n			
5299.	FISHPOT LOOKOUT & ACCESS	4.8	4.8	0	L	L	0	0	0	0	0	0	0	0	4.8	0	n	np		500	n			
5411.	TWO SISTERS LOOKOUT & ACCESS	6	6	0	L	L	0	0	0	1	0	0	0	0	6	0	n	np		500	n		SP	94/95
5431.06	NAVER CREEK - REBMAN F.S.R.	4.3	4.3	0	L	L	0	0	0	1	0	0	0	0	4.3	0	y	np	n/a		n			
5464.01	NYLAND LAKE F.S.R.	37.8	37.8	30	L	L	2	1	0	3	2	2	0	0	37.8	0	y	np		7000	n			
5464.02	NYLAND LAKE - BIRREL F.S.R.	4.5	4.5	4.5	L	L	0	0	0	0	2	0	0	0	4.5	0	y	np		2000	n			
5823.01	TZENZAICUT LAKE F.S.R.	52.5	52.5	45	L	L	3	1	0	5	0	2	0	0	52.5	0	y	np		7000	n			
5823.03	TZENZAICUT - GARNER F.S.R.	30	30	30	L	L	5	1	0	4	0	2	0	0	30	0	y	np		1000	y			
5823.06	TZENZAICUT - NARCOSLI F.S.R.	22	22	13	L	L	0	0	0	2	1	0	0	0	22	0	y	np		5000	y			
5823.07	TZENZAICUT - NARCOSLI WEST F.S.	12	12	12	L	L	0	0	0	1	0	0	0	0	12	0	y	np	n/a		y			
6398.02	KEITHLEY CREEK - CRAZE CREEK F	1.8	1.8	0	L	L	0	1	0	0	1	0	0	0	1.8	0	y	np		1000	n			
7525.01	RAM LOOKOUT AND ACCESS	4.5	4.5	0	L	L	0	0	0	1	0	0	0	0	4.5	0	y	np	n/a		n		SP	94/95
7525.02	RAM ACCESS	2.2	2.2	0	L	L	0	0	0	1	0	0	0	0	2.2	0	n	np	n/a		n			
7622.01	TIBBLE CREEK F.S.R.	9.8	9.8	9.8	L	L	0	0	0	1	0	0	0	0	9.8	0	n	np	n/a		y			
7672.02	MICHELLE - MARMOT F.S.R.	6	6	6	L	L	0	0	0	2	0	0	0	0	6	0	y	np	n/a		n			
7672.04	MICHELLE - McFARLAND F.S.R.	13	13	0	L	L	0	0	0	2	0	0	0	0	13	0	y	np		3000	n			
7672.05	MICHELLE - TOIL F.S.R.	13.4	13.4	0	L	L	0	0	0	2	0	0	0	0	13.4	0	y	np		3000	y			
7672.07	MICHELLE - CANYON MOUNTAIN F.S	22	22	0	L	L	0	0	0	2	0	0	0	0	22	0	y	np		5000	n			
7672.08	MICHELLE - FISHPOT F.S.R.	9.7	9.7	0	L	L	0	0	0	1	0	0	0	0	9.7	0	y	np		500	y			
7672.09	MICHELLE - CANYON MTN. WEST F.:	19	19	0	L	L	0	0	0	2	0	0	0	0	19	0	y	np		5000	n			
7672.11	MICHELLE - LITTLE MTN. F.S.R.	7.4	7.4	0	L	L	0	0	0	2	0	0	0	0	7.4	0	y	np		4000	y			
7672.12	MICHELLE - FIRE F.S.R.	8	8	0	L	L	0	0	0	2	0	0	0	0	8	0	y	np		500	y			
7672.13	MICHELLE - KLUSKUS F.S.R.	4.9	4.9	0	L	L	0	0	0	2	0	0	0	0	4.9	0	y	np		500	n			
7672.14	MICHELLE-CANYON-MAXWELL CR. F	8.1	8.1	0	L	L	0	0	0	2	0	0	0	0	8.1	0	y	np		500	n			
7674.01	SWEDE CREEK F.S.R.	16.9	16.9	16.9	L	L	0	0	0	3	0	1	0	0	16.9	0	y	np	n/a		y			
7744.01	JAMES MOUNTAIN - LOOKOUT F.S.R	14.6	14.6	14.6	L	L	0	0	0	4	0	0	0	0	14.6	0	y	np	n/a		n			
7853.01	UDY CREEK F.S.R.	11.5	11.5	11.5	L	L	0	1	0	3	0	0	0	0	11.5	0	y	np	n/a		y			
8238.01	PETERS CREEK F.S.R.	3.1	3.1	3.1	L	L	0	0	0	1	1	0	0	0	3.1	0	y	np	n/a		y			
8258.01	TINGLEY CREEK F.S.R.	9.3	9.3	4	L	L	0	0	0	1	0	0	0	0	9.3	0	y	np		1000	n			
8350.01	TAUTRI CREEK F.S.R.	13.9	13.9	0	L	L	1	0	0	2	0	1	0	0	13.9	0	y	np		5000	n			
8350.02	TAUTRI CREEK - SOUTH F.S.R.	1.1	1.1	0	L	L	1	0	0	2	0	0	0	0	1.1	0	y	np	n/a		n			
8350.03	TAUTRI CREEK - WENTWORTH F.S.I	13.9	13.9	13.9	L	L	0	0	0	3	0	1	0	0	13.9	0	y	np	n/a		n			
8481.01	UPPER UDY F.S.R.	13.1	13.1	13.1	L	L	0	0	0	2	0	0	0	0	13.1	0	y	np	n/a		y			
8609.01	REDWATER F.S.R.	14.7	14.7	14.7	L	L	0	0	0	1	0	0	0	0	14.7	0	y	np	n/a		y			
8609.02	REDWATER - F.S.R.	2	2	0	L	L	0	0	0	1	0	0	0	0	2	0	y	np		500	n			
9171.01	NORTH BAEZAEKO F.S.R.	11.8	11.8	11.8	L	L	0	0	0	2	0	0	0	0	11.8	0	y	np	n/a		n			
9433.01	LANDSLIDE F.S.R.	12.9	12.9	0	L	M	1	0	0	1	0	0	0	1	12.9	0	y	np		2000	y			
			468.3																	58500				
5073.01	SWIFT RIVER F.S.R.	50	50	48	M	M	3	0	0	2	10	1	0	0	50	2500	y	np		1000	y			
5073.02	SWIFT - ATIS F.S.R.	5.3	5.3	0	M	M	1	1	0	1	4	0	0	0	5.3	0	y	np	n/a		n			
5073.03	SWIFT - BENDIXON F.S.R.	5.5	5.5	0	M	M	0	0	0	1	4	0	0	0	5.5	0	y	np	n/a		n			

5073.04	SWIFT - LITTLE SWIFT F.S.R.	6.5	6.5	6.5	M	M	0	0	0	2	3	0	0	0	6.5	0	y	np	n/a	n			
5073.05	SWIFT RIVER - NORTH F.S.R.	5.9	5.9	0	M	M	0	0	0	1	2	0	0	0	5.9	0	y	np	n/a	n			
5073.06	SWIFT - PORTER F.S.R.	4.8	4.8	0	M	M	0	0	0	1	2	0	0	0	4.8	0	y	np	n/a	y			
5073.07	SWIFT - SOVEREIGN F.S.R.	4	4	4	M	M	0	0	0	1	4	0	0	0	4	0	y	np	n/a	y			
5431.03	NAVER CREEK - BIG VALLEY F.S.R.	19.8	19.8	0	M	M	0	0	0	1	2	0	0	0	19.8	0	y	np	8000	y			
6398.01	KEITHLEY CREEK - BARKERVILLE F	12	12	0	M	M	1	3	0	1	4	1	0	0	12	0	y	np	2000	y			
7624.01	NORTON CREEK F.S.R.	36.5	36.5	5	M	M	2	2	0	2	3	0	0	0	36.5	0	y	np	n/a	y			
7624.02	NORTON CREEK - TREGILLUS F.S.R	16.9	16.9	16.9	M	M	1	2	0	2	3	0	0	0	16.9	0	y	np	n/a	y			
7672.01	MICHELLE - BAEZAEKO F.S.R.	90	90	10	M	L	30	0	100	6	1	2	0	1	90	0	y	np	8000	y			
7672.03	MICHELLE - COGLISTIKO F.S.R.	30.1	30.1	0	M	M	30	0	100	1	1	1	0	0	30.1	0	y	np	10000	y			
7678.02	CUNNINGHAM - MATTHEW F.S.R.	24.7	24.7	0	M	M	0	0	0	1	0	0	0	1	24.7	0	y	np	5000	y			
7678.03	CUNNINGHAM - BABCOCK F.S.R.	30.5	30.5	0	M	M	0	0	0	2	3	0	0	0	30.5	0	y	np	5000	y			
7683.01	KETCHAM CREEK F.S.R.	80.8	80.8	30	M	M	2	0	0	3	4	1	0	0	80.8	0	y	np	5000	y			
7683.02	KETCHAM CREEK - BIG VALLEY F.S.	18.5	18.5	0	M	M	0	0	0	1	2	0	0	0	18.5	0	y	np	1000	y			
7863.01	KRUGER LAKE F.S.R.	16	16	0	M	M	1	1	0	1	0	0	0	0	16	0	y	np	5000	y			
7984.01	SNAKING RIVER F.S.R.	23.5	23.5	23.5	M	M	2	2	0	2	0	1	0	0	23.5	0	y	np	n/a	y			
9852.01	HALLIS LAKE F.S.R.	2.6	2.6	0	M	L	0	1	0	0	1	1	0	0	2.6	0	y	np	500	n			
			483.9																50500				
7672.06	MICHELLE - BALDFACE F.S.R.			0	N/A	N/A	0	0	0		0	0	0	0		0	n/a	np	n/a	n			
8258.02	TINGLEY CREEK - SOUTH F.S.R.			0	N/A	N/A	0	0	0	0	0	0	0	0		0	n/a	np	n/a	n			
																			364800				
		1304.7	2257	577.3																			

Williams Lake

Project #	Forest Service Road		Length		Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FN Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint #km	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
3181.01	DE SOUS MOUNTAIN LOOKOUT F.S.	5	5	0	L	L	0	0	0	0	0	0	0	0	5	$0	N		$1,000	N	Lookout access		
5145.01	SMOKEY MOUNTAIN L/O F.S.R.	6	6	4	H	L	0	3	0	2	0	1	0	0	2	$0	N		$8,000		Lookout access		
5145.02	SMOKEY MOUNTAIN F.S.R.	10	8	8	L	L	0	3	0	2	0	0	0	0	2	$0	N		$0	N	Comm. Gravel pits/Hydro		
5265.02	ALEX GRAHAM - PALMER LAKE F.S.	21	21	21	L	L	0	5	2	10	0	2	0	0	0	$0	N		$0	N			
5265.04	ALEX GRAHAM - ROSS LAKE F.S.R.	15	15	15	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N			
5265.06	ALEX GRAHAM - JUNCTION F.S.R.	4	4	4	L	L	0	5	2	10	0	2	0	0	0	$0	N		$0	N			
5265.08	ALEX GRAHAM - HANCE FSR	4	4	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
5265.09	ALEX GRAHAM - STROUSE FSR	4.2	4.2	0	L	L	0	0	0	0	0	0	0	0	4.2	$0	N		$1,500	N			
6416.01	GASPARD CREEK F.S.R.	22.5	22.5	22.5	L	L	10	5	2	10	1	1	0	1	0	$0	Y		$100,000	Y	2200 Rd-Culvert Replacement, Wales Creek @ 2237.5Km-Bridge		
6416.02	GASPARD CREEK - CHURN CREEK	68	68	68	L	M	5	3	3	5	1	1	0	1	0	$0	N		$0	Y	2800 Rd		
6416.03	GASPARD CREEK - BIG CREEK F.S.	11.7	11.7	11.7	L	L	1	1	0	2	0	0	0	0	0	$0	Y		$100,000	Y	2900 Rd-Culvert Replacement, Wales Creek @ .2 Km-Bridge		
6416.04	GASPARD CREEK - MONS CREEK F.	36	36	36	L	M	1	2	0	2	0	0	0	1	0	$0	N		$0	Y	2400 Rd		
6416.05	GASPARD CR. - W. CHURN CREEK	16	16	16	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	3200 Rd		
6416.06	GASPARD CREEK - WALES CREEK	14.5	14.5	14.5	L	M	0	2	0	1	0	0	0	0	0	$0	N		$0	N	2200A Rd		
6416.07	GASPARD CREEK - RED MOUNTAIN	18	18	18	L	M	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	Red Mtn. Road		
6416.08	GASPARD CREEK - EIGHT F.S.R.	9	9	9	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N	2818 Rd		
6416.09	GASPARD CREEK - NINE F.S.R.	2	2	0	H	L	0	0	0	0	0	0	0	0	2	$0	N		$1,500	N			
6416.10	GASPARD CREEK - TEN F.S.R.	0.6	0.6	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.11	GASPARD CREEK - ELEVEN F.S.R.	1.7	1.7	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.12	GASPARD CREEK - TWELVE F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6416.13	GASPARD - THIRTEEN F.S.R.	3.3	3.3	3.3	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
6416.14	GASPARD - FOURTEEN F.S.R.	0.78	0.78	0.78	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
6416.15	GASPARD CREEK - EAST CHURN F.S	15	15	15	L	M	0	0	0	1	0	0	0	0	0	$0	N		$0	Y	UNDER CONSTRUCTION		
6416.20	GASPARD CREEK - DASH F.S.R.	7	7	7	M	M	0	0	0	0	0	0	0	0	7	$0	N		$3,000	Y	UNDER CONSTRUCTION		
6426.02	ROSITA - MACKIN CREEK F.S.R.	14	14	0	H	L	1	1	0	0	0	0	0	0	14	$0	N		$2,000	Y	100D Rd		
6426.03	ROSITA - TWAN F.S.R.	1.3	1.3	0	L	L	0	0	0	0	0	0	0	0	1.3	$0	N		$500	N			
6426.04	ROSITA - TWAN EAST F.S.R.	1.5	1.5	0	L	L	0	0	0	0	0	0	0	0	1.5	$0	N		$500	N			
6426.05	ROSITA - TWAN NORTH F.S.R.	0.25	0.25	0	L	L	0	0	0	0	0	0	0	0	0.25	$0	N		$200	N			
6426.06	ROSITA - FIR F.S.R.	16	16	0	H	L	0	0	0	0	0	1	0	0	16	$0	N		$2,000	N			
6426.07	ROSITA - ARTHUR F.S.R.	1.4	1.4	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6426.08	ROSITA - MACKIN WEST F.S.R.	3.5	3.5	0	L	L	0	0	0	0	0	0	0	0	3.5	$0	N		$2,000	N			
6426.09	ROSITA - RENNER F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	2	$0	N		$1,000	N			
6426.10	ROSITA - MACKIN TEN F.S.R.	0.7	0.7	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
6426.11	ROSITA - FIR EAST F.S.R.	12	12	8	H	L	0	0	0	3	0	0	0	0	8	$0	N		$2,500	N			
6426.12	ROSITA - FIR TWELVE F.S.R.	0.2	0.2	0.2	L	L	0	0	0	0	0	0	0	0	0.2	$0	N		$200	N			
6426.13	ROSITA - OWEN F.S.R.	3.7	3.7	0	L	L	0	0	0	0	0	0	0	0	3.7	$0	N		$1,000	N			
6426.14	ROSITA - OWEN NORTH F.S.R.	1.2	1.2	0	L	L	0	0	0	0	0	0	0	0	1.2	$0	N		$500	N			

Williams Lake

Project #	Forest Service Road		Length		Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FN Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint #km	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
6426.15	ROSITA - WEBSTER F.S.R.	10.6	10.6	7	L	L	0	0	0	1	0	0	0	0	3.6	$0	N		$1,000	N			
6426.16	ROSITA - FIR SOUTH F.S.R.	2.6	2.6	0	L	L	0	0	0	0	0	0	0	0	2.6	$0	N		$1,000	N			
6426.17	ROSITA - FIR WEST F.S.R.	1.8	1.8	1.8	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
6426.18	ROSITA - REC F.S.R.	0.5	0.5	0	M	L	0	0	0	0	0	0	0	0	0.5	$0	N		$500	N	REC SITE ACCESS		
6568.01	BECHER LAKE F.S.R.	9.5	9.5	9.5	L	L	0	0	1	0	0	0	0	0	0	$0	N		$0	N			
6970.01	CHILCOTIN SOUTH F.S.R.	51	51	51	H	M	100	10	3	20	0	3	30	2	10	$0	N		$10,000	Y			
7564.01	JOES LAKE F.S.R.	31	31	31	H	M	0	0	2	2	0	0	0	0	0	$0	Y		$100,000	Y	Alkali Creek Culvert Replacment With Bridge @ .5 Km		
7721.01	CHIMNEY LAKE F.S.R.	69.5	69.5	69.5	M	L	50	5	2	6	1	1	30	1	0	$0	N		$0	Y			
7721.02	CHIMNEY LAKE - 1200 F.S.R.	7.8	7.8	0	L	L	0	0	0	0	0	0	0	0	7.8	$0	N		$1,000	N			
7721.03	CHIMNEY LAKE - GULATCH F.S.R.	14.3	14.3	14.3	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
7968.01	MOFFAT LAKE F.S.R. SEC. A	28	28	28	H	L	10	5	1	5	0	0	10	0	0	$6,000	N		$0	N			
7968.05	MOFFAT LAKE - SPOKIN F.S.R.	9	0	0	L	L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.06	MOFFAT LAKE - SPOKIN SIX F.S.R.	1.5	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.07	MOFFAT LAKE - SPOKIN SEVEN F.S.	0.56	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.08	MOFFAT LAKE - SPOKIN EIGHT F.S.R	0.4	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.09	MOFFAT LAKE - SPOKIN NINE F.S.R	1.74	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.10	MOFFAT LAKE - SPOKIN TEN F.S.R.	3.76	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.11	MOFFAT LAKE - SPOKIN ELEVEN F.S	0.44	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
7968.12	MOFFAT LAKE - SPOKIN TWELVE F.S	0.49	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8041.01	BIG LAKE F.S.R.	9	9	9	L	L	0	0	0	5	0	0	0	0	0	$0	N		$0	N			
8041.02	BIG LAKE - SOUTH F.S.R.	3	3	3	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8054.01	PLACE LAKE F.S.R.	13.3	13.3	0	H	L	10	0	1	0	0	0	10	0	13.3	$0	N		$2,000	N	REQUIRES UPGRADING		
8055.01	MAYFIELD LAKE F.S.R.	10	10	10	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N			
8055.02	MAYFIELD LAKE - RANGE F.S.R.	5.6	5.6	5.6	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8055.03	MAYFIELD LAKE - PORTER CREEK F	2.8	2.8	2.8	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
8055.04	MAYFIELD LAKE - SPRINGHOUSE F.	5.75	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8055.05	MAYFIELD LK SPRINGHOUSE HILLS	2.8	0	0		L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8077.01	SKELTON LAKE F.S.R.	22	22	22	L	L	0	1	0	2	0	0	0	0	0	$0	N		$0	Y	700 Rd		
8107.01	SHERIDAN CREEK F.S.R.	4.3	4.3	0	L	L	1	0	0	0	0	0	1	0	4.3	$0	N		$0	Y			
8363.01	GROUNDHOG CREEK F.S.R.	22.8	22.8	22.8	L	L	0	2	0	2	0	0	0	0	0	$0	N		$0	Y	5400 Rd		
8368.01	ROCKY LAKE F.S.R.	6	6	6	L	L	0	2	0	2	0	0	0	0	0	$0	N		$0	N			
8368.02	ROCKY LAKE - WEST F.S.R.	5.1	5.1	0	L	L	0	0	0	0	0	0	0	0	5.1	$0	N		$0	N			
8368.03	ROCKY LAKE - VEDAN F.S.R.	6	6	0	L	L	0	0	0	0	0	0	0	0	6	$0	N		$0	N	NEW SB ROAD		
8375.01	MUD CREEK F.S.R.	18.6	18.6	0	L	L	0	0	0	0	0	0	0	0	18.6	$0	N		$1,500	N			
8389.01	LITTLE CHURN CREEK F.S.R.	10	0	0			0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
8395.01	HAWKS CREEK F.S.R.	8.1	8.1	0	L	L	0	0	0	0	0	0	0	0	8.1	$0	N		$1,000	Y			
8395.02	HAWKS CREEK - FREDDY F.S.R.	2.1	2.1	0	L	L	0	0	0	0	0	0	0	0	2.1	$0	N		$1,000	N			
8395.03	HAWKS CREEK-BIG LAKE CREEK F.	0.6	0.6	0	L	L	0	0	0	0	0	0	0	0	0.6	$0	N		$500	N			
8395.04	HAWKS CREEK-SKULOW LAKE F.S.R	0.3	0.3	0	L	L	0	1	0	0	0	0	0	0	0.3	$0	N		$500	N	RESEARCH PROJECT ACC.		
8395.05	HAWKS CREEK - FIVE F.S.R.	0.9	0.9	0	L	L	0	0	0	0	0	0	0	0	0.9	$0	N		$500	N			

Williams Lake

Project #	Forest Service Road		Length		Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FN Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint #km	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
8491.01	WILLAN CREEK F.S.R.	2.8	2.8	0	L	L	0	0	0	0	0	0	0	0	2.8	$0	N		$1,000	N			
8674.01	MALINDA CREEK F.S.R.	1.3	1.3	1.3	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
8930.01	SOLOMON LAKE F.S.R.	7.2	7.2	7.2	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
8930.02	SOLOMON LAKE - NORTH F.S.R.	2.2	2.2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9116.01	COLLINS CREEK F.S.R.	3	3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9424.01	TILL LAKE F.S.R.	2.1	2.1	0	H	L	0	0	0	0	0	1	0	0	2.1	$0	N		$1,000	N	TILL LK REC SITE		
9425.01	HOWES LAKE F.S.R.	7.3	7.3	7.3	L	L	0	1	0	0	0	1	0	0	0	$0	N		$0	N			
9429.01	FOREST LAKE F.S.R.	2.9	2.9	1.5	H	L	1	0	0	1	0	1	0	0	1.4	$0	N		$1,000	N			
9435.01	BORLAND CREEK F.S.R.	5	0	0	L	L	0	0	0	0	0	0	0	0	0	$0			$0		SURVEY ONLY		
9444.01	BAMBRICK CREEK F.S.R.	11	11	0	L	L	0	0	0	0	0	0	0	0	11	$0	N		$2,500	N			
9444.02	BAMBRICK CREEK - SOUTH F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9444.03	BAMBRICK CREEK - SOUTH F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	
9489.01	GUY MOUNTAIN F.S.R.	8.4	8.4	8.4	L	L	0	0	0	2	0	0	0	0	0	$0	N		$3,000	N			
9489.02	GUY MOUNTAIN - NORTH F.S.R.	0.7	0.7	0.7	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
9490.01	RIDGE F.S.R.	3.6	3.6	2	L	L	0	0	0	2	0	0	0	0	0	$0	N		$0	N	1.6 SBFEP DEACTIVATED	SP	$0
9491.01	STROUSE F.S.R.	22.2	22.2	18	L	L	0	1	0	1	0	0	0	0	0	$0	N		$0	N	4.2 SBFEP DEACTIVATED	SP	$0
9491.02	STROUSE LAKE - F.S.R.	2	2	0	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N	SBFEP DEACTIVATED	SP	$0
9715.01	MONS LAKE F.S.R.	0.2	0.2	0	L	L	0	0	0	0	0	1	0	0	0.2	$0	N		$500	N			
9715.02	MONS LAKE - F.S.R.	0.3	0.3	0	L	L	0	0	0	0	0	1	0	0	0.3	$0	N		$500	N			
9730.01	DEWER LAKE F.S.R.	4.1	4.1	4.1	L	L	0	0	0	1	0	0	0	0	0	$0	N		$0	N			
9770.01	MACKIN CREEK F.S.R.	10	10	0	L	L	0	1	0	0	0	0	0	0	10	$0	N		$1,500	N			
9806.01	HART LAKE F.S.R.	1.1	1.1	0	L	L	0	0	0	0	0	0	0	0	1.1	$0	N		$1,000	N			
9882.01	JOHNNY CREEK F.S.R.	0.9	0.9	0.9	L	L	0	0	0	0	0	0	0	0	0	$0	N		$0	N			
		857.47	814	626.7			190	41	19	115	0	17	81	6	186.55	$6,000		0	$359,900				$0

Horsefly Forest District
Resource Management Plan
2001 - 2002

Project #	Forest Service Road	Length			Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	MOF Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (y/n)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
1240.01	HORSEFLY - QUESNEL LAKE F.S.R	2.0	2	1.6	L	L	1		20			1			1.6			1000	200	N	brushing		
1242.01	HORSEFLY RIVER F.S.R.	33.3	33.3	33.3	H	H	1	2	5	3					33.3			6000	1430	Y	brushing 12km		
1242.u2	HORSEFLY RIVER - MCKUSKY F.S.R	21	19.4	7.1	H	H	1	3	6	2		1			19.4			15000	2000	Y	sight distance 6711		
1242.03	HORSEFLY RIVER-MACKAY RIVER F	15.2	6.9	6.9	M	M			3	1	1				6.9					Y			
1242.04	HORSEFLY RIVER-BOULDERY CREE	33.3	33.7	33.7	M	M			2	1		1			33.7			15000	4000	Y	Bioeng bouldery slide 6120		
1242.05	HORSEFLY RIVER - PRAIRIE F.S.R.	11.8	12.6	7	L	L	2		4	1		1			12.6				1320	N	surface maintenance		
1242.06	HORSEFLY RIVER - WHISKEY F.S.R.	0.7	0.7	0.7	L	L			3	1					0.7					Y			
1242.07	HORSEFLY RIVER - HAWKLEY F.S.R	0.2	0.2	0.2	L	L			1	1	1				0.2					Y			
1253.01	BLACK CREEK - BOSK LAKE F.S.R.	29.9	29.9	29.9	H	H			8	2					29.9				3300	Y	surface maintenace		
1253.02	BLACK CREEK - ELBOW LAKE F.S.R.	1.3	1.3		L	L			2	2		1			1.3			650	150	N	brushing surface maintain		
1253.03	BLACK CREEK-TISDALL SEC.A F.S.R	10.5	10.5	10.7	H	H			3	2					10.5				1100	N	" "		
1253.03	BLACK CREEK-TISDALL SEC. B F.S.R	1.2	1.2	1.2	M	M			3			1			1.2				200	N	" "		
1253.04	BLACK CREEK-MCKINLEY LAKE F.S	2.2	2.2		L	L	4		1			1			2.2				300	N	" "		
1253.05	BLACK CREEK - CRUISER F.S.R.	7.4	7.4		L	L			2	2		1			7.4				880	N	" "		
1253.06	BLACK CREEK - TIMBUKTWO F.S.R.	0.5	0.5		L	L														N		SP	1000
1253.07	BLACK CREEK - TIMBUKTHREE F.S.I	0.2	0.2		L	L														N		SP	500
1253.08	BLACK CREEK - BOSCAR LAKE F.S.F	1.8	1.8		L	L			1											N		T	
1254.	ARCHIE LAKE - HORSEFLY LAKE CA	0	0																	N	deleted		
3074.01	WARREN MOUNTAIN LOOKOUT & AC	2.8	2.8																	N	no file record - deleted		
3295.01	BLACK MOUNTAIN F.S.R.	4.9	4.9																	N	deleted 92/12/17		
4148.	SUEY LOOKOUT AND ACCESS TRAIL	7.0	7																	N	deletion in progress		
4160.01	HORSEFLY - LIKELY F.S.R	25.6	25.6		M	M			4						25.6			5000	3000	Y	brush 10km		
4160.02	HORSEFLY - GAVIN LAKE F.S.R.	18	22		M	M			5		1	1			22				2500	Y	Surface maintenance		
4160.03	HORSEFLY - POLLEY LAKE F.S.R.	3.7	2.9		L	L			2			1			3.7				400	N	" "		
4160.04	HORSEFLY - CUB CREEK F.S.R.	2.9	2		L	L			1						2					N			
4160.05	HORSEFLY - DITCH F.S.R	0.9	0.9		L	L														N			
4161.01	SPANISH LAKE F.S.R.	34.8	24.1	24.1	H	H	1		5			1			24.1				3080	Y	surface maintenance		
4161.02	SPANISH - CLEARBROOK F.S.R.	9.9	9.9	9.9	H	H			2	2		1			9.9				1200	N	" "		
5382.01	HENDRIX CREEK F.S.R. SECTION B	20.8	17.2	17.2	H	H		3	3	2		1			17.2				2200	Y	" "		
5382.02	HENDRIX - MOLYBDONITE F.S.R.	10.2	10.2	10.2	H	H			4	1					10.2					Y			
5382.03	HENDRIX - MCKINLEY F.S.R.	1.7	1.7	1.7	H	H			2	1					1.7					N			
5382.07	HENDRIX - DIVAN F.S.R.	6.2	6.2	6.2	M	M		3	1	2					6.2				660	N			
5654.01	MOREHEAD - BOOTJACK F.S.R.	7.8	7.8	7.8	H	H	1		2	2	1	1								N			
5654.02	MOREHEAD - BOOTJACK - GAVIN F.S	12.1	12.1		L	L			1	1	1				12.1				1300	Y	surface maintenance		
5654.04	MOREHEAD-BOOTJACK BOAT LAUN	1.9	1.9		L	L									1.9					N			
5662.01	MOREHEAD - BEAVERMOUTH F.S.R.	31.5	31.5		L	L														N	deletion in progress		
5662.02	MOREHEAD - BUXTON CREEK F.S.R	9.8	9.8	9.8	H	H			4	1					9.8					N			
5662.03	MOREHEAD - JACOBIE CREEK F.S.R	0.8	0.8		L	L			1											N		T	
6142.01	CARIBOO RIVER F.S.R.	62.8	60.8	60.8	H	H	1	1	6	1	2	1			54km			500	5940	Y	brushing rec site		
6142.02	CARIBOO RIVER-SPANISH CREEK F.	9.7	5		L	L									5				550	N	deletion requested 4.7km		
6142.03	CARIBOO RIVER - NORTH F.S.R.	3.8	4.3	4.3	L	L			1	1					4.3			20000		Y	widen switch back remove	Clair Cr. Culvert	
6142.04	CARIBOO RIVER - ISHKLOO CREEK	2.5	2.5	2.5	L	L				1					2.5					N	deletion requested 2.5km		

Horsefly Forest District
Resource Management Plan
2001 - 2002

Project #	Forest Service Road	Length			Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	MOF Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (y/n)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
6398.01	KEITHLEY CREEK-BARKERVILLE F.S	10	10		L	L														N	deletion requested 10km		
7508.	VIEWLAND MOUNTAIN REPEATER A	1.9	1.9		L	L														N	no file record - deleted		
7968.01	MOFFAT LAKE SEC. B F.S.R.	42.5	42.5	42.5	H	H	1		7	2		1			42.5				2200	Y	surface maintenance		
7968.02	MOFFAT SOUTH WING F.S.R.	1.9	2	1.9	L	L			2											N		T	
7968.03	MOFFAT WEST WING F.S.R.	0.8	0.8		L	L			1											N		T	
7968.04	MOFFAT NORTH WING F.S.R.	0.9	0.9		L	L			1											N		T	
7968.05	MOFFAT - BUSTER F.S.R.	1.2	1.2		L	L			2						1.2					Y	small business FD#2	T	
8294.01	CHINA CABIN CREEK F.S.R.	3	3		L	L			1											N	" " "	T	
8294.02	CHINA CABIN CREEK - EAST F.S.R.	0.4	0.4		L	L			1											N	" " "	T	
8294.03	CHINA CABIN CREEK - WEST F.S.R.	1.1	1.1	1.1	M	M				1					1.1					N	deletion requested R10154		
8299.01	KEITHLEY CREEK SOUTH F.S.R.																			N	deleted R01350		
8359.01	HARVEYS CREEK F.S.R.	11.2	14.3	14.3	L	L	2		2	1					14.3			15000	1430	Y	slide repair 9.5 km		
8359.02	HARVEYS CREEK - WEST F.S.R.	1.6	1.6		L	L														N	deletion requested		
8377.01	GRAVEL CREEK F.S.R.	6.7	6.7		L	L			1						1				200	N			
8377.02	GRAVEL CREEK - NORTH F.S.R.	5.6	5.6		L	L														N	deletion requestd		
8380.01	KANGAROO CREEK F.S.R.	20	21.3	21.3	H	H			12	1					21.3					N	small business FD#2		
8380.02	KANGAROO CREEK - WEST F.S.R.	5.3	7.2	7.2	L	L			2						7.2					N	" " "		
8380.03	KANGAROO CREEK - SWIFT CREEK	2	2		L	L			1											N	" " "		
8380.04	KANGAROO CREEK - NORTH F.S.R.	0.7	0.7		L	L			1											N	" " "		
8380.05	KANGAROO CREEK - MOUNTAIN F.S	1.4	1.4		L	L			1											N	" " "		
8380.06	KANGAROO CREEK - BORDER F.S.R	1	1		L	L			1											N	" " "		
8380.07	KANGAROO CREEK - SIDEWINDER F	1.2	1.2		L	L			1											N	" " "		
8380.08	KANGAROO CREEK - SOUTH F.S.R.	1.5	1.8		L	L			1											N	" " "		
8380.09	KANGAROO CREEK - HIGH F.S.R.	1.6	2.1		L	L			1											N	" " "		
8380.10	KANGAROO CREEK - LOW F.S.R.	2.3	2.3		L	L			2											N	" " "		
8380.11	KANGAROO CREEK - LAST F.S.R.	6.2	6.2	6.2	M	M			3						6.2					N	" " "		
8380.12	KANGAROO CREEK - MAUD F.S.R.	0.7	0.7	0.7	M	M			2						0.7					N	" " "		
8380.13	KANGAROO CREEK - MAUD WEST F	1.7	1.7	1.7	M	M			2						1.7					N	" " "		
8571.01	CORNER LAKE F.S.R.	5.1	5.1		L	L			1											N	" " "		
8571.02	CORNER LAKE - WEST F.S.R.	0.95	0.95		L	L			1											N	" " "		
8571.03	CORNER LAKE - NORTH F.S.R.	0.9	0.9		L	L			1											N	" " "		
8571.04	CORNER LAKE - EAST F.S.R.	0.6	0.6		L	L			1											N	" " "		
8572.01	LITTLE LAKE F.S.R.	3	7.1	7.1	H	H			6	1										N			
8646.01	CRAZY LAKE F.S.R.	11.4	11.4		L	L			2										200	N	Surface maintenance		
8646.02	CRAZY LAKE - EAST F.S.R.	1.2	1.2		L	L			1										100	N	" "		
8646.03	CRAZY LAKE - NORTH F.S.R.	1.4	1.4		L	L			1										100	N	" "		
8681.01	WHIFFLE LAKE F.S.R.	17.7	17.7		L	L			2	2					10				2000	N	" "		
8681.02	WHIFFLE LAKE - PLATO F.S.R.	2.6	2.6		L	L		1	1						2.6					N			
8682.01	HEN INGRAM F.S.R.	15.9	14.9	14.9	M	M			3	2					14.9					N			
8682.02	HEN INGRAM - NORTH F.S.R.	5.7	5.2	4	M	M			1	1					4					N			
8684.01	VIEWLAND F.S.R.	9.1	9.4	9.4	L	L			2	1					9.4					N			
8684.02	VIEWLAND - NORTH F.S.R.	0.5	0.5		L	L														N	small business FD#2		

Horsefly Forest District
Resource Management Plan
2001 - 2002

Project #	Forest Service Road	Length			Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	MOF Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint (y/n)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
8684.03	VIEWLAND - NORTH EAST F.S.R.	0.3	0.3		L	L														N	" " "		
8814.01	ANTOINE LAKE F.S.R.	10.1	10.1		L	L	3								5				550	N	surface maintenance		
8815.01	BELLS LAKE F.S.R.	3.0	3		L	L	1								3					N	small business FD#2		
8815.02	BELLS LAKE - SOUTH F.S.R.	0.8	0.8		L	L														N	deletion requested		
8891.01	SUCKER CREEK F.S.R.	6.0	6	6	H	H	1		4	1					5			15000	550	N	Surface maintenance/repair pilings		
8891.02	SUCKER CREEK - NORTH F.S.R.	2.3	2.3	2.3	H	H			1	1					2.3					N	" "		
8891.03	SUCKER CREEK - EAST F.S.R.	1	0.7	0.7	L	L			1						0.7					N	" "		
8998.01	JACOBIE LAKE F.S.R.	3.5	3.5	3.5	M	M			1	1					3				500	Y	" "		
9127.01	BEVERIDGE LAKE F.S.R.	2.2	2.2	2.2	L	L			1	1					1					N			
9128.01	HORSEFLY BAY F.S.R.	2.8	2.8		L	L			1											N		T	
9162.01	SAUSSER LAKE F.S.R.	8.8	8.8		L	L			3						8				880	N	small business FD#2		
9163.01	MILES CREEK F.S.R.	0.7	0.7		L	L			2											N			
9192.01	ABBOTT LAKE F.S.R.	1.9	1.9		L	L				1										N	deleted R11388		
9239.01	COSSACK LAKE F.S.R.	6.2	6.2	6.2	H	H	2		3	1					6.2				700	N			
9239.02	COSSACK LAKE - WEST F.S.R.	0.6	0.6		M	M			2						0.6					N	small business FD#2		
9239.03	COSSACK LAKE - EAST F.S.R.	0.7	0.7		M	M			2						0.7					N	" " "		
9285.01	MACDONALD MEADOW F.S.R.	4.0	4	4	M	M			3	1					4					N	" " "		
9285.02	MACDONALD - NORTH F.S.R.	2.3	2.3		L	L			2						2.3					N			
9286.01	DEERHORN F.S.R.	7.9	7.9	7.9	M	M			3	2					7.9				770	N			
9286.02	DEERHORN EAST F.S.R.	2.8	2.8		L	L	1		2						2.8				330	N			
9286.03	DEERHORN - SOUTH F.S.R.	0.7	0.7		L	L			1											N			
9317.01	WIGGINS CREEK F.S.R.	1.0	0.3	0.3	M	M	2		2	2										N			
9320.01	YANKS PEAK F.S.R.	10.8	10.8		L	L			1	1	3				10.8				3000	Y	surface maintenance		
9349.01	MALCOLM LAKE F.S.R.	2.2	2.2		L	L			1						2					N	small business FD#2		
9382.01	BIRCH BAY F.S.R.	0.3	0.3		L	L														N	Float plane access		
9531.01	WOODJAM F.S.R.	9.5	9.5	9.5	L	L			2	1					6				660	Y			
9551.01	WEBBER MEADOWS F.S.R.	4.5	4.5	4.5	M	M			1	1					4.5					N	small business FD#2		
9572.01	DOG MEADOW F.S.R.		3.5	3.5	L	L			1	1					3.5					N	R0 1317		
9705.01	KWUN LAKE F.S.R.	1.5	1.5																		not constructed delete		
9773.01	GAVIN CREEK F.S.R.																				not constructed delete		
9862.01	FALSE ARM F.S.R.	0.8	0.8	0.8	L	L			1	1					0.8					N			
Total			**760**															**93150**	**49880**				

108km low priority maintenance at $14,065
178km medium priority maintenance at $11,630
287km high maintenance at $24,185

100 Mile House

Project #	Forest Service Road	Length				Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	Licensee	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FNAR Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint kms	Struc Repair ($)	culvert replace (y/n)	other R/R X	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
1231.01	BEGBIE LOOKOUT & ACCESS ROAD	0.6	0.6		PROT	L	L	0	0	0	0	0	0	0	0									
4451.01	GUSTAFSEN LAKE F.S.R.	33.0	33.0	31.7	nsWEL	M	M	1	10	0	4	0	1	0	1	33				6,000.00		control Ditch water near fish streams		
4451.02	GUSTAFSEN - DOG CREEK F.S.R.	23.4	23.4	19.5	WELD	L	L	0	4	0	2	0	0	0	0	23				6,000.00		control Ditch water near fish streams		
4451.03	GUSTAFSEN - NEILSON LAKE F.S.R.	16.9	16.9	11.5	WELD	L	L	0	4	0	1	0	1	0	0									
4451.04	GUSTAFSEN - WEST F.S.R.	13.2	13.2	9.6	WELD	L	L	0	4	0	2	0	0	0	0									
4451.05	GUSTAFSEN - EDMONDS CREEK F.S	6.2	6.2	6.2	Ains	L	L	0	1	0	1	0	0	0	0									
4451.06	GUSTAFSEN - KELSEY F.S.R.	3.8	3.8			L	L	0	0	0	0	0	0	0	0									
4451.07	GUSTAFSEN - NORTH F.S.R.	6.5	6.5	6.4	WELD	L	L	0	4	0	2	0	0	0	0									
4451.08	GUSTAFSEN - SOUTH F.S.R.	6.3	6.3	12.5	WELD	L	L	0	4	0	2	0	0	0	0									
4451.09	GUSTAFSEN - SWAMP F.S.R.	1.9	1.9	1.8	WELD	L	L	0	1	0	1	0	0	0	0									
4451.10	GUSTAFSEN - EAST F.S.R.	7.6	7.6	7.7	WELD	L	L	0	2	0	1	0	0	0	0									
4451.11	GUSTAFSEN - BIG LAKE F.S.R.	10.9	10.9		SBFP	L	L	0	2	0	1	0	0	0	0	11							SP	$5,000
4451.12	GUSTAFSEN LAKE F.S.R.	2.0	2.0			L	L	0	1	0	1	0	0	0	0									
4451.13	GUSTAFSEN - FLAT LAKES F.S.R.	2.2	2.2			L	L	0	1	0	1	0	0	0	0									
4465.01	TIMOTHY MTN. LOOKOUT & ACCESS	7.1	3.5		PROT	L	L	0	4	0	0	0	0	0	0									
5281.01	LIME LOOKOUT F.S.R.	10.7	10.7		PROT	L	L	0	1	0	0	0	1	0	0								sp	$20,000
5289.01	WINDY MOUNTAIN F.S.R.	27.0	27.0	24	Ains	L	L	15 Cabins	5	0	2	0	4	0	0					$2,500		control ditch water near fish streams		
5289.02	WINDY - FRENCH F.S.R.	0.4	0.4			L	L	0	0	0	0	0	1	0	0	0.4								
5289.03	WINDY - PREACHER F.S.R.	7.2	7.2	7.2	Ains	L	L	0	2	0	1	0	1	0	0	7.2				$2,500				
5289.04	WINDY - JUDSON F.S.R.	11.7	11.7	11.7	Ains	L	L	0	3	0	1	0	1	0	0	11.7				$1,500				
5289.06	WINDY - SUMMIT F.S.R.	2.1	2.1		SBFP	L	L	0	1	0	0	0	0	0	0							sp km 0-1.5 p km1.5-2.0	sp/p	$2,500
5289.09	WINDY - BOWERS F.S.R.	1.8	1.8		SBFP	L	L	0	1	0	1	0	0	0	0	1.8				$1,500				
5382.01	HENDRIX CREEK F.S.R. SECTION A	11.0	11.0	6	Weld	M	M	2	5	0	3	1	1	0	0									
5382.04	HENDRIX CREEK - MINE F.S.R.	8.1	8.1			L	M	0	1	0	1	1	0	0	0	8.1				$2,000				
5402.01	JESMOND LOOKOUT AND ACCESS F	5.3	5.3	3	ig/PRO	L	L	0	2	0	1	0	0	0	0									
5402.02	JESMOND F.S.R.	4.1	4.1	4.1	Lig	L	L	0	2	0	2	0	0	0	0									
5687.01	RIVER LAKES F.S.R.	15.1	15.1	15.1	Ains	L	L	0	4	0	2	0	0	0	0									
5687.02	RIVER LAKES - BIG BAR LAKE F.S.R.	17.0	17.0	17	Ains	L	L	0	4	0	2	0	0	0	0						yes			
5687.03	RIVER LAKES - FIFTYNINE CREEK F.	6.1	6.1	6.1	Ains	L	L	0	4	0	1	0	0	0	0									
5712.01	CLINTON - LOON LAKE F.S.R.	63.4	63.4	63.4	Ains	M	H	2	6	0	2	0	2	0	0				x	$6,000		control ditch water near fish streams		
5712.02	CLINTON - BONAPARTE F.S.R.	5.5	5.5			L	L	0	1	0	2	0	0	0	0	5.5								
5712.03	CLINTON - YOUNG LAKE F.S.R.	6.0	6.0			L	L	0	1	0	2	0	0	0	0	6								
5712.06	CLINTON - UPPER LOON LAKE F.S.R	29.3	29.3	29.3	Ains	L	L	0	8	0	2	0	0	0	0									
5712.07	CLINTON - TULERIC F.S.R.	10.0	10.0	10	Ains	L	H	2	1	0	1	0	0	0	0	10				$5,000	yes			
5712.09	CLINTON - ENRIGHT F.S.R.	3.3	3.3	3.3	AINS	L	L	0	3	0	1	0	0	0	0									
5712.10	CLINTON - MOUNT GRANT F.S.R.	4.7	4.7		SBFP	L	M	1	2	0	1	0	0	0	0	4.7				$2,500				
5956.01	LANG LAKE F.S.R.	25.5	25.5	15	Weld	L	M	1	1	0	2	0	4	0	1	10				$2,500		center section beyond private	SP	$15,000
5956.02	LANG - ACCESS #1 F.S.R.	0.3	0.3			L	L	0	0	0	0	0	0	0	0	0.3							SP	$2,500
5956.03	LANG - ACCESS #2 F.S.R.	1.0	1.0			L	L	0	0	0	0	0	0	0	0	1							SP	$2,500
5956.04	LANG - ACCESS #3 F.S.R.	12.6	12.6		WELD	L	L	0	1	0	1	0	0	0	0									
5956.05	LANG LAKE - BOOMERANG F.S.R.	0.6	0.6			L	L	0	1	0	0	0	1	0	0	0.6						temp deact done in1996	T	$1,995
6048.01	TATTON - CANAMA F.S.R.	17.0	17.0			M	M	6	4	0	0	0	1	0	0	17				$1,500				
6048.02	TATTON - HELENA F.S.R.	3.9	3.9			L	L	0	4	0	0	0	1	0	0	3.9				$500				
6048.03	TATTON - SNAGG F.S.R.	20.7	20.7	20.7	Weld	L	L	0	4	0	2	0	1	0	0	21				$1,500				
6048.04	TATTON - MCKINLEY F.S.R.	2.3	2.3			L	M	2	4	0	2	0	0	0	0	2.3				$500				
6048.05	TATTON - BIG LAKE F.S.R.	2.0	2.0			L	L	0	0	0	0	0	1	0	0	2							SP	$5,000

100 Mile House

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		road register (km)	actual (km)	under permit (km)	Licensee	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FNAR Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint kms	Struc Repair ($)	culvert replace (y/n)	other R/R X	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
6061.01	BOWERS - CANIM F.S.R.	36.2	36.2	36.2	Weld	M	L	0	2	0	4	0	3	0	0	36	$30,000	y			yes	Fish blockage wolf creek		
6061.02	BOWERS - WINDY CREEK F.S.R.	10.0	10.0			L	L	15 cabins	1	0	0	0	2	0	0	3	$50,000	Y		$1,000		Preacher creek bridge installat	P	$15,000
6061.03	BOWERS - JIM F.S.R.	5.1	5.1		SBFP	L	L	0	1	0	1	0	0	0	0	5.1				$2,500				
6061.04	BOWERS - LANDING F.S.R	0.5	0.5			L	L	0	0	0	0	0	1	0	0		$10,000							
6061.05	BOWERS - DEKA F.S.R.	13.3	8.0		SBFP	L	L	0	1	0	2	0	0	0	0	8				$2,000				
6061.06	BOWERS - CANIMRED F.S.R.	10.0	10.0		SBFP	L	H	0	2	0	4	0	0	0	0	6				$2,000			sp	$3,000
6061.07	BOWERS - LORIN F.S.R.	6.0	6.0			L	L	0	0	0	0	0	1	0	0	6	$30,000	y		$1,000	yes	Fish blockage		
6061.08	BOWERS - DEKA SOUTH F.S.R.	0.3	0.3		SBFP	L	L	0	0	0	0	0	0	0	0							p- 1997	p	
6061.09	BOWERS - DEKA WEST F.S.R.	0.8	0.8		SBFP	L	L	0	0	0	0	0	0	0	0							p- 1997	p	
6061.10	BOWERS - CANIM RED SOUTH F.S.R	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$1,000
6061.11	BOWERS - CANIM RED EAST F.S.R.	0.4	0.4		SBFP	L	L	0	1	0	2	0	0	0	0	0.4				$500				
6061.12	BOWERS - CANIM RED NORTH F.S.R	2.9	2.9		SBFP	L	L	0	1	0	2	0	0	0	0	2.9				$2,000				
6315.01	EAGAN - BONAPARTE F.S.R.	56.6	56.6	10	Ains	M	H	10	6	0	4	0	5	0	0	56				$10,000				
6315.02	BONAPARTE - SPUR #1 F.S.R.	4.5	4.5			L	L	0	0	0	0	0	1	0	0									
6315.03	BONAPARTE - SHARP LAKE F.S.R.	4.5	4.5			L	L	0	1	0	1	0	0	0	0								SP	$10,000
6315.04	BONAPARTE - YOUNG LAKE F.S.R.	6.0	6.0			L	L	0	1	0	1	0	0	0	0								SP	$10,000
6315.05	BONAPART - SCOT	1.9	1.9			L	L	0	0	0	0	0	1	0	0	1.9				$500				
6315.06	BONAPART - HAMMER	0.6	0.6			L	L	0	0	0	0	0	1	0	0	0.6				$100				
6315.07	BONAPARTE - RAYFIELD F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0	0								P	$500
6315.08	BONAPARTE - PRESSY F.S.R.	2.4	2.4		SBFP	L	L	0	1	0	1	0	0	0	0	2.4				$2,000				
6315.09	BONAPARTE - LITTLE SCOTT F.S.R.	0.2	0.2			L	L	0	0	0	0	0	1	0	0	0.2				$100				
6315.10	BONAPARTE - NORTH HAMMER F.S.	0.3	0.3			L	L	0	0	0	0	0	1	0	0	0.3				$100				
6315.11	BONAPARTE - CAMPEAU NORTH F.S	2.0	2.0		SBFP	L	L	0	1	0	1	0	0	0	0	2				$1,000				
6315.12	BONAPARTE - RAYFIELD SOUTH F.S	5.1	5.1		SBFP	L	L	0	2	0	1	0	0	0	0	5.1				$2,500				
6315.13	BONAPARTE - SIMMONS F.S.R.	3.0	3.0		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$3,000
6315.14	BONAPARTE - FROSTY F.S.R.	2.4	2.4		SBFP	L	L	0	0	0	1	0	0	0	0									
6411.01	SPOUT - OIE F.S.R.	27.1	27.1	3	Weld	L	L	0	1	0	2	0	1	0	0									
6817.01	PAVILION F.S.R.	0.0	0.0			L	L	0	0	0	0	0	0	0	0							Road not accessable do to private property		
6817.02	MAIDEN - EDWARD GULCH F.S.R.	18.4	18.4			L	L	0	0	0	0	0	0	0	0							Kamloops FR		
6818.01	HART RIDGE F.S.R.	8.9	8.9			L	M	1	2	0	3	0	0	0	0	8.9				$1,500				
6818.02	HART RIDGE - CLINTON CREEK F.S.I	8.1	8.1			L	L	0	2	0	3	0	0	0	0	8.1				$1,500				
7357.01	GREEN LAKE F.S.R.	8.0	8.0		SBFP	L	L	0	1	0	2	0	0	0	0	8				$4,000				
7357.02	GREEN LAKE - JIM CREEK F.S.R.	6.1	6.1			L	L	0	1	0	0	0	1	0	0								SP	
7357.03	GREEN LAKE - WEST F.S.R.	3.1	3.1			L	L	0	1	0	0	0	0	0	0								SP	
7357.04	GREEN LAKE - NOLAN F.S.R.	2.4	2.4			L	L	0	1	0	0	0	1	0	0								SP	
7357.07	GREEN LAKE - GRAHAM F.S.R.	2.1	2.1			L	L	0	1	0	0	0	0	0	0								SP	
7357.08	GREEN LAKE - GRAHAM WEST	1.1	1.1			L	L	0	1	0	0	0	0	0	0								SP	
7357.09	GREEN LAKE - 70 MILE WEST F.S.R.	2.1	2.1	2.1	Weld	L	L	0	1	0	3	0	0	0	0								SP	
7357.10	GREEN LAKE - NOLAN LAKE EAST F.	1.1	1.1		SBFP	L	L	0	1	0	0	0	0	0	0								SP	$1,500
7357.11	GREEN LAKE - LITTLE GREEN LAKE	3.7	3.7		SBFP	L	L	0	1	0	1	0	0	0	0	3.7				$2,000				
7357.12	GREEN LAKE -JIM LAKE SOUTH	0.8	0.8		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,000
7357.13	GREEN LAKE -PRESSY LAKE WEST	1.0	1.0		SBFP	L	L	0	1	0	0	0	0	0	0	0.5				$500		sp km 0.5-1.0	SP	$500
7376.02	ROCKY - HOWARD F.S.R.	5.0	5.0			L	L	0	0	0	0	0	1	0	0	5				$1,500				
7450.01	MEADOW LAKE F.S.R.	38.0	38.0	38	Lig	L	L	0	5	0	2	0	0	0	0									
7450.02	MEADOW LAKE - LONG LAKE F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	0	0	0	0	0								p	$1,500
7450.03	MEADOW LAKE - WEST F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0	0								p	$500

100 Mile House

Project #	Forest Service Road	Length				Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	Licensee	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FNAR Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint kms	Struc Repair ($)	culvert replace (y/n)	other R/R X	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
7450.04	MEADOW LAKE - CANOE F.S.R.	12.5	12.5	12.5	Lig	L	L	0	5	0	1	0	0	0	0									
7456.01	WILCOX LAKE - BRADLEY CREEK F.S	28.0	28.0	28	Weld	L	L	0	5	0	2	0	0	0	0									
7456.02	WILCOX - TIMOTHY LAKE F.S.R.	9.0	9.0			L	H	0	0	0	0	0	1	0	0	9				$1,500			SP	$10,000
7456.03	WILCOX - DEMPSEY LAKE F.S.R.	9.5	9.5			L	M	1	1	0	2	0	0	0	0	9.5				$1,500				
7456.04	WILCOX - COFFEE EAST F.S.R.	5.9	5.9	5.9	Weld	L	L	0	1	0	2	0	0	0	0									
7456.05	WILCOX - COFFEE WEST F.S.R.	9.5	9.5	9.5	Weld	L	L	0	1	0	2	0	0	0	0									
7456.06	WILCOX - WESTMAN F.S.R.	4.0	4.0		SBFP	L	L	0	1	0	1	0	0	0	0	4				$2,000				
7456.07	WILCOX - BOAS F.S.R.	0.6	0.6		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$500
7456.08	WILCOX - BEDINGFEILD LAKE F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$500
7456.09	WILCOX - LANG F.S.R.	3.9	3.9		SBFP	L	L	0	0	0	2	0	0	0	0	3.9				$2,000				
7457.01	MAZE LAKE F.S.R.	10.8	10.8	10.8	River	M	M	2	2	0	2	0	0	0	0	10.8								
7457.02	MAZE - FORBES F.S.R.	17.7	17.7	17.7	Lig	M	M	4	2	0	4	0	0	0	0	17								
7457.03	MAZE - RAIL F.S.R.	10.6	10.6	8	Weld	L	L	0	1	0	3	0	0	0	0									
7464.01	HORSE - LAKE F.S.R.	18.0	18.0			L	L	0	2	0	0	0	0	0	0								SP	
7464.05	HORSE - FISET F.S.R.	7.9	7.9			L	L	0	1	0	0	0	0	0	0								SP	
7464.06	HORSE - QUINN F.S.R.	1.3	1.3			L	L	0	1	0	0	0	0	0	0								SP	
7464.07	HORSE - EARLE F.S.R.	1.3	1.3			L	M	0	0	0	0	0	1	0	0	1.3				$1,000				
7471.01	DREWRY LAKE F.S.R.	7.0	7.0	7	Ains	M	M	2	1	0	2	0	1	0	0	7				$1,500				
7471.02	DREWRY - WEBB F.S.R.	24.2	24.2	23.5	Ains	M	M	1	2	0	3	0	0	0	0	24				$2,000				
7471.03	DREWRY - TONGUE F.S.R.	2.8	2.8		SBFP	L	L	0	0	0	1	0	0	0	0	2.8				$1,500				
8106.01	GREENLEE LAKE F.S.R.	3.1	3.1			L	L	0	0	0	0	0	1	0	0		$60,000							
8122.01	FIFTYONE CREEK F.S.R.	3.5	3.5		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$3,000
8276.01	VALENZUELA LAKE F.S.R.	2.5	2.5		SBFP	L	L	0	1	0	0	0	0	0	0								SP	$2,000
8276.02	VALENZUELA LAKE - NORTH F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0	0								P	$500
8277.01	DOUGHERTY LAKE F.S.R.	19.5	19.5		SBFP	L	L	0	2	0	3	0	0	0	0	18				$2,500		p km 18.0-19.5	p	$1,500
8277.02	DOUGHERTY LAKE - LOON F.S.R.	2.3	2.3		SBFP	L	L	0	1	0	1	0	0	0	0	2.3				$1,000				
8277.03	DOUGHERTY LAKE - SOUTH F.S.R.	2.0	2.0		SBFP	L	L	0	2	0	2	0	0	0	0	2				$1,000				
8277.04	DOUGHERTY LAKE - ILLAHEE F.S.R.	3.5	3.5		SBFP	L	L	0	0	0	1	0	0	0	0								sp	$3,000
8279.01	SEVENTY SIX MILE F.S.R.	3.1	3.1		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$3,000
8279.02	SEVENTY SIX MILE - SOUTH F.S.R.	3.4	3.4		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$3,000
8279.03	SEVENTY SIX MILE - NORTH F.S.R.	1.8	1.8		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$2,000
8433.01	CLINTON CREEK F.S.R.	15.0	15.0	6	Ains	L	L	0	3	0	2	0	1	0	0	15				$2,500		Village watershed	SP	$10,000
8434.01	WAVEY LAKE F.S.R.	13.0	13.0	13	Ains	L	M	1	4	0	2	0	2	0	0	13	$65,000	y		$1,500	y	Fish blockage @ 6.5km		
8434.02	WAVEY LAKE - SNAG F.S.R.	11.0	11.0		SBFP	L	L	0	1	0	2	0	0	0	0	8				$4,000		sp km 8-10 p km 10-11	SP	$3,000
8610.01	BOSS CREEK F.S.R.	13.0	13.0	13	Weld	M	M	0	1	0	2	0	0	0	0	13				$2,500				
8610.02	BOSS - TERRACED F.S.R.	2.0	2.0			L	L	0	0	0	1	0	0	0	0									
8610.03	BOSS - BOOMERANG F.S.R.	9.8	9.8			L	M	0	1	0	2	0	0	0	0		$45,000	y		$2,500	y		SP	$15,000
8610.04	BOSS - CANIM F.S.R.	13.0	13.0			L	H	75 CABIN	2	1	2	0	1	0	0			y		$3,000				
8610.05	BOSS - NORTH F.S.R.	4.9	4.9		SBFP	L	L	0	1	0	1	0	0	0	0	4.9				$2,500				
8610.06	BOSS - WELLER F.S.R.	0.9	0.9		SBFP	L	L	0	0	0	1	0	0	0	0								SP	$1,000
8610.07	BOSS - EAST F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,500
8611.01	SPANISH CREEK F.S.R.	34.0	34.0	34	Weld	M	M	0	1	0	2	1	2	0	0									
8611.02	SPANISH - HOTFISH - ART CREEK F.	3.7	3.7		SBFP	L	L	0	1	0	1	0	0	0	0	2.7	$35,000	y		$1,500	yes	Fish blockage @ 3.2 km	sp	$1,000
8611.03	SPANISH - PENDLETON F.S.R.	6.0	6.0			L	L	0	1	0	2	0	2	0	0					$1,500				
8611.04	SPANISH - DECEPTION F.S.R.	6.0	6.0			L	M	1	0	0	2	1	0	0	0	4				$1,500				
8611.05	SPANISH - PENDLETON SPUR 1 F.S.	3.5	3.5		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$2,000

100 Mile House

Project #	Forest Service Road	Length				Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	Licensee	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FNAR Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint kms	Struc Repair ($)	culvert replace (y/n)	other R/R X	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
8611.06	SPANISH - PENDLETON SPUR 2 F.S.I	1.8	1.8		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,000
8611.07	SPANISH - NO NAME F.S.R.	21.8	21.8	21.8	Weld	L	M	0	1	0	2	1	1	0	0									
8611.08	SPANISH - NEIL CREEK F.S.R.	4.6	4.6		SBFP	L	L	0	1	0	2	0	0	0	0	4.6				$2,500				
8611.09	SPANISH - DECEPTION WEST F.S.R.	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0								sp	$1,000
8611.10	SPANISH - BURTT CREEK F.S.R.	6.1	6.1		SBFP	L	L	0	0	0	1	0	0	0	0	5.1				$2,500		sp km 5.1-6.1	sp	$1,000
8611.11	SPANISH - DECEPTION EAST F.S.R.	2.0	2.0		SBFP	L	L	0	1	0	1	0	0	0	0	2				$1,000				
8611.12	SPANISH - ART CREEK SOUTH F.S.R	1.0	1.0		SBFP	L	L	0	1	0	1	0	0	0	0									
8611.13	SPANISH - BOUNDARY F.S.R.	3.4	0.9		SBFP	L	H	0	0	0	1	0	0	0	0	0.9				$1,000				
8611.14	SPANISH - DECEPTION SOUTH FSR	4.9	4.9		SBFP	L	L	0	1	0	1	0	0	0	0	3.9				$2,000		sp km 3.9-4.9	sp	$1,000
8611.15	SPANISH - NO NAME WEST F.S.R.	0.9	0.9		SBFP	L	M	0	0	0	1	0	0	0	0	0.9				$1,000				
8611.16	SPANISH - BURTT CREEK SPUR 1 F.:	0.9	0.9		SBFP	L	L	0	0	0	1	0	0	0	0								sp	$1,000
8611.17	SPANISH - UPPER BURTT F.S.R.	4.5	1.5		SBFP	L	L	0	0	0	1	0	0	0	0	1.5						under construction		
8641.01	BERLICHINGEN CREEK F.S.R.	1.2	1.2			L	L	0	0	0	0	0	0	0	1							SP deact in 1995	SP	
8645.01	MORTON MEADOW F.S.R.	4.5	4.5		SBEP	L	L	0	0	0	1	0	0	0	0								SP	$10,000
8645.02	MORTON MEADOW - SPUR LEFT F.S	1.0	1.0		SBEP	L	L	0	0	0	0	0	0	0	0							p- 1997	p	
8645.03	MORTON MEADOW - SPUR RIGHT F.	0.5	0.5		SBEP	L	L	0	0	0	0	0	0	0	0							p- 1997	P	
8645.04	MORTON MEADOW - TWO F.S.R.	0.7	0.7		SBEP	L	L	0	0	0	1	0	0	0	0								sp	$2,700
8645.06	MORTON MEADOW - NORTH F.S.R.	0.4	0.4		SBEP	L	L	0	0	0	0	0	0	0	0								P	$2,400
8645.07	MORTON MEADOW - SOUTH F.S.R.	2.4	2.4		SBEP	L	L	0	0	0	1	0	0	0	0							sp km 1.2-2.4	SP	$1,500
8645.08	MORTON MEADOW - RAIL LAKE F.S.	0.5	0.5		SBEP	L	L	0	0	0	1	0	0	0	0								sp	$2,500
8711.01	DEKA LAKE F.S.R.	1.0	1.0			L	M	1	0	0	0	0	0	0	0									
9141.01	BRIGADE CREEK F.S.R.	9.7	9.7	9.7	Ains	L	L	0	4	0	2	0	1	0	0									
9141.02	BRIGADE CREEK - EAST F.S.R.	5.5	5.5		SBFP	L	L	0	0	0	2	0	0	0	0	5.5				$2,500				
9141.03	BRIGADE CREEK - MOOSE CREEK F	4.2	4.2		SBFP	L	L	0	0	0	1	0	0	0	0	4.2				$2,000				
9146.01	RAIL - MINE F.S.R.	24.0	24.0	10	Ains	L	L	0	3	0	2	1	0	0	0	15				$4,000		Culverts require insp		
9146.02	RAIL - MINE - NORTH F.S.R.	1.4	1.4		SBFP	L	L	0	0	0	1	0	0	0	0								P	$1,997
9173.01	GOTCHEN LAKE F.S.R.	5.1	5.1		SBFP	L	M	1	1	0	1	0	0	0	0	4.1				$1,500		sp km 4.1-5.1	sp	$1,000
9173.02	GOTCHEN LAKE - WEST F.S.R.	4.5	4.5		SBFP	L	L	0	0	0	0	0	0	0	0	4.5				$2,000		proposed extension		
9173.03	GOTCHEN LAKE - MCKINLEY F.S.R.	2.1	2.1		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$2,000
9237.01	EIGHTY THREE MILE F.S.R.	3.0	3.0		SBFP	L	L	0	1	0	0	0	0	0	0					$1,500	yes	Listed on bridge replacement	SP	$2,000
9237.02	EIGHTY THREE MILE - WEST F.S.R.	0.5	0.5		SBFP	L	L	0	0	0	0	0	0	0	0								P	$500
9238.01	TAYLOR CREEK F.S.R.	4.0	4.0		SBFP	L	L	0	1	0	2	0	0	0	0	4				$2,000				
9238.02	TAYLOR CREEK - SOUTH F.S.R	0.6	0.6		SBFP	L	L	0	0	0	1	0	0	0	0							sp 1998	SP	
9238.03	TAYLOR CREEK - NORTH F.S.R	2.2	2.2		SBFP	L	L	0	0	0	1	0	0	0	0	2.2				$1,000				
9265.01	RUTH LAKE F.S.R	2.4	2.4		SBFP	L	L	0	0	0	1	0	0	0	0	2.4				$1,000				
9308.01	EDMUNDS LAKE F.S.R	8.8	8.8	8.8	Ains	L	L	0	1	0	2	0	0	0	0									
9375.01	SEVENTY FOUR MILE F.S.R.	2.0	2.0			L	L	0	0	0	0	0	0	0	0	2.5				$1,000		RESREACH PROJECT		
9375.02	SEVENTY FOUR MILE - EAST F.S.R.	1.3	1.3		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,500
9463.01	CAMPEAU CREEK F.S.R.	4.3	4.3		SBFP	L	M	1	1	0	1	0	0	0	0	4.3				$2,000				
9585.01	LONGBOW LAKE F.S.R.	6.4	6.4		SBFP	L	L	0	1	0	1	0	0	0	0	6				$3,000		sp km 6.0-6.4	SP	$500
9586.01	DUCKLING LAKE F.S.R.	4.5	4.5		SBFP	L	M	1	1	0	1	0	0	0	0	4.5				$2,000				
9586.02	DUCKLING - MARAIS F.S.R.	1.2	1.2		SBFP	L	L	0	0	0	1	0	0	0	0							sp 1997	sp	
9593.01	IRISH LAKE F.S.R.	2.3	2.3			L	L	0	0	0	0	0	1	0	0	1				$1,000				
9616.01	HUTCHISON F.S.R.	1.2	1.2		SBFP	L	L	0	0	0	1	0	0	0	0								SP	$1,200
9616.02	HUTCHISON - F.S.R.	0.6	0.6		SBFP	L	L	0	1	0	1	0	0	0	0	0.6				$500				
9616.03	HUTCHISON - F.S.R.	3.1	3.1		SBFP	L	L	0	0	0	1	0	0	0	0	1.5				$1,000		sp km1.5-3.1	SP	$1,500

100 Mile House

Project #	Forest Service Road	Length				Priority	Risk	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
		road register (km)	actual (km)	under permit (km)	Licensee	(H/M/L)	(H/M/L)	Residences (#)	Commercial Use (#)	FNAR Use (#)	Licensees Use (#)	Mining Use (#)	Rec Sites (#)	School Access (#)	Parks Access (#)	Routine Maint kms	Struc Repair ($)	culvert replace (y/n)	other R/R X	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost
9616.04	HUTCHINSON - EAST F.S.R.	2.1	2.1		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$2,000
9637.01	WALMITH LAKE F.S.R.	6.2	6.2			L	L	0	1	0	1	0	0	0	0					$1,000			SP	
9677.01	SIMMONS CREEK F.S.R.	5.1	3.0		SBFP	L	L	0	1	0	0	0	0	0	0	1.5				$1,000				
9677.02	SIMMONS CREEK - NORTH F.S.R.	0.3	0.3		SBFP	L	L	0	0	0	1	0	0	0	0							sp-1999	SP	
9720.01	NINETY MILE F.S.R.	0.3	0.3			L	L	0	0	0	0	0	0	0	0							TRANFER TO AINS ROAD PERMIT		
9756.01	WOHLLEBEN CREEK F.S.R.	11.9	11.9		SBFP	L	L	0	0	0	1	0	0	0	0	11.9				$5,000				
9802.01	NINETYFOUR MILE F.S.R.	5.5	5.5		SBFP	L	L	0	0	0	1	0	0	0	0	5.5				$2,500				
9802.02	NINETYFOUR MILE F.S.R.	2.5	2.5		SBFP	L	L	0	0	0	1	0	0	0	0	2.5				$1,000				
9815.01	ORREN CREEK F.S.R.	4.6	4.6		SBFP	L	L	0	0	0	1	0	0	0	0	3				$1,500		sp km 3.0 - 4.6	sp	$1,500
9815.02	ORREN CREEK - NORTH F.S.R.	0.6	0.6		SBFP	L	L	0	0	0	0	0	0	0	0								SP	$1,000
9834.01	STINSON CREEK F.S.R.	2.2	2.2		SBFP	L	L	0	0	0	1	0	0	0	0	2.2				$1,500				
9862.01	ELK LAKE F.S.R.	11.4	11.4		SBFP	L	L	0	1	0	1	0	0	0	0	9				$4,500		sp km 9 - 11.4	sp	$2,500
9872.01	LONE BUTTE F.S.R.	2.0	2.0		SBFP	L	L	0	0	0	1	0	0	0	0	2				$1,000				
9897.01	61 MILE F.S.R.	1.3	1.3		SBFP	L	L	0	1	0	1	0	0	0	0	1.3				$500				
9906.01	SCOT CREEK F.S.R.	1.1	1.1		SBFP	L	L	0	0	0	0	0	0	0	0							Prop. Reconstruction 2000		
9906.02	SCOT CREEK - WEST F.S.R.	2.3	2.3		SBFP	L	L	0	0	0	0	0	0	0	0							Prop. Reconstruction 2000		
9906.03	SCOT CREEK - SPUR 1 F.S.R.	0.4	0.4		SBFP	L	L	0	0	0	0	0	0	0	0							Prop. Reconstruction 2000		
9906.04	SCOT CREEK - SOUTH F.S.R.	1.6	1.6		SBFP	L	L	0	0	0	0	0	0	0	0							Prop. Reconstruction 2000		
9907.01	SUTHERLAND LAKE F.S.R.	3.1	3.1		SBFP	L	L	0	1	0	1	0	0	0	0	3.1				$1,500		Further Construction 2000		
9908.01	INTERLAKES F.S.R.	2.8	2.8		SBFP	L	L	0	0	0	1	0	0	0	0	2.8				$1,500				
9909.01	JEEP LAKE F.S.R.	8.7	8.7		SBFP	L	L	0	1	0	1	0	0	0	0	8.7				$4,000				
9909.02	JEEP LAKE - SPUR #1 F.S.R.	0.7	0.7		SBFP	L	L	0	0	0	1	0	0	0	0	0.7				$500				
	Totals	1406.7	1390.2	671.3				44								658.2	$325,000			$185,800				$207,792

Chilcotin

			Length		Risk	Priority	Users & Access Needs								Maintenance Activities						Comments	Deactivation	
Distric	Project #	Forest Service Road	road register (km)	under permit (km)	(H/M/L)	(1/2/3)	Residence (#)	Commercia (months)	First Nations	Licensees	Mining (months)	Rec Sites (#)	School Access	Park Access	Routine Maint (km)	dust control ($)	culvert replace (y/n)	other	cost/yr	Major Structures (y/n)		Type (SP or P)	Cost ($)
5	4407.01	TATLAYOKO LAKE F.S.R.	28		h	1	6	2	12		4-9	1	1	1	5				4000		seas drain		
5	4633.01	ANAH LAKE F.S.R.	21	8	h	1	12	12	12	4-9		1	1	1	5		y	fish	6000		ditch stab		
5	4633.02	ANAH LAKE - BEAVER TRAIL F.S.R.	8		l	3																	
5	4953.01	ELKIN - TASEKO LAKE F.S.R.	20		m	1	12	4-9	12			1											
5	4953.02	ELKIN - VEDAN F.S.R.	10		l	3							1				y	fish	5000		beav stop		
5	5265.01	ALEX GRAHAM - ANAHIM CREEK F.S.R.	32		h	3	6					1		1	6		y	fish	8000		beav stop		
5	5265.02	ALEX GRAHAM - PALMER LAKE F.S.R.	80	60	h	1	10	4-9	12					1	4		y	fish	8000		beav stop		
5	5265.03	ALEX GRAHAM - L/O ACCESS FSR	23	8	h	2		4-6	4-9													P	5000
5	5265.05	ALEX GRAHAM - ZENZACO F.S.R.	24		m	2	1	4-9															
5	5265.07	ALEX GRAHAM - GOERING CREEK F.S.R.	75	18	m	2	1		4-9														
5	5265.08	ALEX GRAHAM - S. ANAHIM CR F.S.R	6		l	3									5		y		10000		remov brg		
5	5265.09	ALEX GRAHAM - ANAHIM CENTRAL F.S.R.	5		m	3																	
5	5265.17	ALEX GRAHAM - ANAHIM NORTH F.S.R.	5		l	3																	
5	5265.18	ALEX GRAHAM - ANAHIM SOUTH F.S.R.	8		l	3																	
5	5475.01	CHILANKO FORKS L/O F.S.R.	12	6	h	1		4-9	12	4-9													
5	5475.02	CHILANKO - EAST F.S.R.	2		l	3																	
5	5475.05	CHILANKO - TATLA CREEK F.S.R.	5		l	3																	
5	5475.06	CHILANKO - MAIN F.S.R.	26	6	m	2	1	4-9		4-9					3				6000		maj drain		
5	5475.07	CHILANKO - FIT MOUNTAIN F.S.R.	11		l	3																	
5	5475.08	CHILANKO - WEST F.S.R.	5		l	3																	
5	5475.09	CHILANKO - SOUTH F.S.R.	4		l	3																	
5	5475.10	CHILANKO - EAST F.S.R.	2		l	3																	
5	6252.01	CHILKO LAKE F.S.R.	26		h	2	4	4-9	12			1		1	8		y	fish	8000		maj drain		
5	7356.01	CLUSKO RIVER - THUNDER MTN. F.S.R.	30		h	2	6	12	12			1	1	1	10			fish	5000		stab appro		
5	7356.04	CLUSKO RIVER - ANEKO F.S.R.	93	36	h	1	4	12	12	4-9			1	1	9		y	fish	36000		8m bridge	SP	3000
5	7356.05	CLUSKO RIVER - ALEXIS MTN. F.S.R.	16	12	h	2	2	4-9							2								
5	7356.06	CLUSKO RIVER - ROSS CREEK F.S.R.	22		h	3											y	fish	10000		mini span		
5	7356.07	CLUSKO RIVER - TZAZATI F.S.R.	68		h	1	1	12	12					1	8		y	fish	6000		beav stop	SP	3000
5	7356.08	CLUSKO RIVER - BROWN CREEK F.S.R.	16		h	1	1	12	12						4		y	fish	36000		8m bridge		
5	7356.09	CLUSKO RIVER - HORSEHOOF CR. F.S.R.	17		l	3																	
5	7356.10	CLUSKO RIVER-CHILCOTIN RIVER F.S.R.	24		l	3																	
5	7356.11	CLUSKO RIVER - SUMMIT F.S.R.	2		l	3																	
5	7356.12	CLUSKO RIVER - CLISBAKO	3		m	3			12													SP	3000
5	7356.13	CLUSKO RIVER - TZAZATI WEST F.S.R.	6		l	3																	
5	7356.15	CLUSKO RIVER - ALEXIS LAKES F.S.R.	4		l	3																	
5	7356.16	CLUSKO RIVER - JANKEY CREEK F.S.R.	6		l	3																	
5	7356.17	CLUSKO RIVER - BROWN EAST F.S.R.	12		h	3											y	fish	5000		beav stop		
5	7356.18	CLUSKO RIVER - NAZKO F.S.R.	2		l	3																	
5	7356.20	CLUSKO RIVER - BIDDY CREEK F.S.R.	2		l	3																	
5	7356.21	CLUSKO RIVER - SPARROW HAWK F.S.R.	1		l	3																	
5	7356.22	CLUSKO RIVER - BAYLIFF LAKE F.S.R.	15		l	3																	
5	7356.23	CLUSKO RIVER - BAYLIFF CREEK F.S.R.	5		l	3																	
5	7356.24	CLUSKO RIVER - ENGLEBERT NORTH FSR	12		l	3																	
5	7356.25	CLUSKO RIVER - EAST ENGLEBERT F.S.R	1		l	3																	
5	7356.26	CLUSKO RIVER - BELL CREEK F.S.R.	8		l	3																	
5	7356.27	CLUSKO RIVER - ANEK0 WEST F.S.R.	8		l	3																	
5	7356.28	CLUSKO RIVER - SPENCER F.S.R.	5		l	3																	
5	7356.29	CLUSKO RIVER - ANEKO NORTH F.S.R.	6		l	3																	
5	7356.30	CLUSKO RIVER - CHEVY F.S.R.	4		l	3																	
5	7365.01	PUNTI LAKE F.S.R. SEC. A & B	8		l	3																	

5	7365.02	PUNTI LAKE F.S.R.	6		l	3															
5	7365.03	PUNTI LAKE F.S.R.	1		l	3															
5	7629.01	RED TOP MOUNTAIN F.S.R.	4		l	3															
5	7629.02	RED TOP MT. PUNTZI AIRFIELD F.S.R.	6		h	1		4-9	12						5	y		4000		ditch stab	
5	7629.03	RED TOP Mt. JORGENSEN CR F.S.R.	8	2	l	3															
5	7651.01	MOSLEY CREEK F.S.R.	21		h	1	12				4-9	1	1		10	y		5000		ditch stab	
5	7980.01	ONE EYE LOOKOUT F.S.R.	13		m	3			12							y		5000		ditch stab	
5	8062.01	MINTON CREEK F.S.R.	14		m	3			12							y		5000		ditch stab	
5	8482.01	TSUH LAKE F.S.R.	16		l	3			12												
5	8644.01	NEWTON EAST F.S.R.	4		m	3									4	y		5000		ditch stab	
5	8653.01	HOLTRY CREEK F.S.R.	50		h	1	8	12					1		8			4000		ditch stab	
5	8876.01	TASEKO RIVER F.S.R.	8		l	3															
5	8876.02	TASEKO RIVER - WEST F.S.R.	8		l	3															
5	9002.01	REDSTONE F.S.R.	13		m	2		4-9	12									3000		ditch stab	
5	9002.02	REDSTONE - MARSH F.S.R.	3		l	3															
5	9002.03	REDSTONE - CHILANKO F.S.R.	1		l	3															
5	9002.04	REDSTONE - NORTH F.S.R.	1		l	3															
5	9002.05	REDSTONE - SOUTH F.S.R.	2		l	3															
5	9002.06	REDSTONE - BLUFF F.S.R.	4		l	3															
5	9002.07	REDSTONE - CANYON F.S.R.	1		l	3															
5	9002.08	REDSTONE - BIDWELL F.S.R.	1		l	3															
5	9017.01	SALT LAKE F.S.R.	14	6	m	3		4-9	12							y		3000		ditch stab	
5	9017.02	SALT LAKE - NORTH EAST F.S.R.	5		l	3															
5	9017.03	SALT LAKE - NORTH WEST F.S.R.	1		l	3															
5	9107.01	NEWTON WEST F.S.R.	6		l	2										y		3000		ditch / drain	
5	9126.01	KAPPAN MOUNTAIN F.S.R.	8		m	3		4-9	12			1									
5	9156.01	SISTERS HILLS F.S.R.	14		h	2	2	4-9	12						8	y		4000		ditch / drain	
5	9156.02	SISTERS - SOUTH F.S.R.	2		l	3															
5	9156.03	SISTERS - SHORT F.S.R.	2		l	3															
5	9156.04	SISTERS.- WEST F.S.R.	2		l	3															
5	9156.05	SISTERS - EAST F.S.R.	4		l	3															
5	9156.06	SISTERS - NORTH F.S.R.	6		l	3															
5	9156.07	SISTERS - CHILC F.S.R.	2		l	3															
5	9156.08	SISTERS - PLOVER F.S.R.	4		l	3															
5	9156.09	SISTERS - MT. ALEXIS F.S.R.	6		m	2															
5	9156.10	SISTERS - GEMS F.S.R.	3		l	3															
5	9156.11	SISTERS - CURVE F.S.R.	1		l	3															
5	9156.12	SISTERS - PEAK F.S.R.	3		l	3															
5	9156.13	SISTERS - KANE F.S.R.	2		l	3															
5	9156.14	SISTERS - MOUSE F.S.R.	5		l	3															
	9156.15	SISTERS -DEER	5		m	3															
	9156.16	SISTERS-HOOF	5		l	3															
5	9157.01	SMOKEY LAKE F.S.R.	45	22	h	1	4	4-9	12	4-9					16			4000		ditch / drain	
5	9157.02	SMOKEY LAKE - SUCKER CREEK F.S.R.	4		m	2															
5	9157.03	SMOKEY LAKE - LONG LAKE F.S.R.	9		l	3															
5	9157.04	SMOKEY LAKE - CARIBOO FLATS F.S.R.	5		l	3															
5	9157.05	SMOKEY LAKE - CASCADE F.S.R.	2		l	3															
5	9157.06	SMOKEY LAKE - RANGER F.S.R.	8		l	2															
5	9157.07	SMOKEY LAKE - LOOKOUT F.S.R.	8		l	2															
5	9157.08	SMOKEY LAKE - LOOKOUTARM F.S.R.	1		l	3															
5	9157.09	SMOKEY LAKE - RICHBERG F.S.R.	4		l	3															
5	9157.10	SMOKEY LAKE - GOAT F.S.R.	4		l	2															
5	9157.12	SMOKEY LAKE - RANGER SOUTH F.S.R.	2		l	2															
5	9157.13	SMOKEY LAKE - RANGER WEST F.S.R.	6		l	3															

5	9157.17	SMOKEY LAKE - KLINAKLINA F.S.R.	9		l	3																	
5	9157.21	SMOKEY LAKE - RICHBURG F.S.R.	12		h	1	1	4-9							4								
5	9157.23	SMOKEY LAKE - AKTAKLIN F.S.R.	10		l	3																	
5	9157.24	SMOKEY LAKE - LONG EAST F.S.R.	6		l	3																	
5	9164.01	HECKMAN F.S.R.	2		m	2																	
5	9165.01	TUSULKO RIVER NORTH F.S.R.	5		l	3																	
5	9166.01	TUSULKO RIVER SOUTH F.S.R.	6		l	3																	
5	9166.02	TUSULKO RIVER-ABUNTLET F.S.R.	6		l	3																	
5	9167.01	FLETCHER LAKE F.S.R.	8		l	3		4-9	12														
5	9167.02	FLETCHER LAKE - RUSHES F.S.R.	3		l	2										y		5000		beav stop			
5	9167.03	FLETCHER LAKE - WEST F.S.R.	4		l	3																	
5	9167.04	FLETCHER LAKE - BOUNDARY F.S.R.	5		l	3																	
5	9167.05	FLETCHER LAKE - NORTH F.S.R.	3		l	3																	
5	9175.01	MINER LAKE F.S.R.	28	8	h	1		4-9	4-9	4-9	4-9	1			6	y		32000	y	6m bridge			
5	9175.02	MINER LAKE - WEST F.S.R.	6		l	2																	
5	9175.03	MINER LAKE - EAST F.S.R.	4		l	2																	
5	9175.04	MINER LAKE - PATTERSON F.S.R.	2		l	2																	
	9175.05	HALFWAY SOUTH FSR	28	28	h	1		4-9	12														
5	9176.01	KLYUL LAKE SOUTH F.S.R.	5	5	m	3		4-9	12														
5	9176.02	KLIYUL LAKE SOUTH - TASEKO F.S.R.	3		l	3																	
5	9215.01	LEES LOOKOUT F.S.R.	4		l	2																	
5	9245.01	FISH LAKE F.S.R.	14	6	h	3		4-9	12			1											
5	9332.01	TEMAPHO SEISMIC F.S.R.	2		l	3																	
5	9334.01	DUSTY LAKE F.S.R.	23	8	h	2	4	4-9	12						6			5000		ditch / drain			
5	9334.02	DUSTY LAKE - HEADWATERS F.S.R.	3	3	l	3																	
5	9334.03	DUSTY - AKTAKLIN F.S.R.	5	5	l	2																	
	9334.04	DUSTY - NORTH	3		l	3																	
	9334.05	DUSTY - EAST	7		l	2																	
	9334.06	DUSTY - SUE	5		l	3																	
5	9334.07	DUSTY LAKE - DEAN F.S.R.	8		l	3																	
	9334.08	DUSTY - KNOB	5		l	2																	
5	9376.01	TEMAPHO LAKE F.S.R.	14	6	l	3																	
5	9443.01	HOOCH LAKE F.S.R.	14		h	2	2	4-9	12							y		7000		ditch / drain			
5	9443.02	HOOCH LAKE - TOWDYSTAN F.S.R.	2		l	3																	
5	9443.03	HOOCH LAKE - GANO NORTH F.S.R.	4		m	3																	
5	9443.04	HOOCH LAKE - EAST F.S.R.	1		l	2																	
5	9443.05	HOOCH LAKE - GAN0 SOUTH F.S.R.	1		l	3																	
5	9443.06	HOOCH LAKE - PETE EAST F.S.R.	1		l	3																	
5	9443.07	HOOCH LAKE - PETE WEST F.S.R.	1		l	2																	
5	9443.08	HOOCH LAKE - WEST MCCLINCHY F.S.R.	4		m	3																	
5	9443.09	HOOCH LAKE - EAST MCCLINCHY F.S.R.	2		l	3																	
5	9443.10	HOOCH LAKE - LITTLE MCCLINCHY F.S.R.	2		l	3																	
5	9443.11	HOOCH LAKE - MCCLINCHY NW F.S.R.	2		l	3																	
5	9443.12	HOOCH LAKE - MCCLINCHY NE F.S.R.	1		l	3																	
5	9443.13	HOOCH LAKE - MCLINCHY SOUTH F.S.R.	3		l	2																	
5	9443.14	HOOCH LAKE - CHARLOTTE LAKE F.S.R.	9		h	2	16					1						5000		ditch / drain			
5	9449.01	MCDERMOTT CREEK F.S.R.	5		l	2																	
5	9450.01	CHILCOTIN RIVER F.S.R.	22		h	1	4							1				5000		ditch / drain			
5	9450.02	CHILCOTIN RIVER - REDSTONE F.S.R.	10		l	2																	
5	9450.03	CHILCOTIN RIVER - RIM F.S.R.	3		l	2																	
5	9451.01	PUNTI LAKE F.S.R.	11		l	2	8	4-9	12														
5	9451.02	PUNTI LAKE - WEST F.S.R.	7		l	2																	
5	9451.03	PUNTI LAKE - EAST F.S.R.	3		l	2																	
5	9451.04	PUNTI - SOUTH F.S.R.	6		l	3																	

5	9452.01	BIDWELL LAKES F.S.R.	24		m	2	4	4-9	12														
5	9452.02	BIDWELL LAKES - MOUNTAIN F.S.R.	6		l	3																	
5	9452.03	BIDWELL LAKES - NORTH F.S.R.	4		l	3																	
5	9452.04	BIDWELL LAKES - F.S.R.	7		l	3																	
5	9452.05	BIDWELL LAKES - F.S.R.	4		l	3																	
5	9452.06	BIDWELL LAKES - F.S.R.	16		l	3																	
5	9452.07	BIDWEEL LAKES - F.S.R.	6		l	2																	
5	9453.01	PUNTZI F.S.R.	12		h	1	8	12									y		3000		ditch / drain		
5	9453.02	PUNTZI LAKE - CHANTSLAR F.S.R.	24	12	h	1	2	4-9		4-9							y		3000		ditch / drain		
5	9453.03	PUNTZI LAKE - F.S.R.	10		l	2																	
5	9453.04	PUNTZI LAKE - F.S.R.	6		l	2																	
5	9454.01	BIG STICK F.S.R.	19	6	m	2	2	4-9	12			1	1				y		4000		ditch / drain		
5	9454.02	BIG STICK - BLOCK F.S.R.	2		l	2																	
5	9454.03	BIG STICK - McCLINCHY F.S.R.	4		l	3																	
5	9454.04	BIG STICK - LOOP F.S.R.	4		l	2																	
5	9455.01	PYPER LAKE F.S.R.	24		l	3																	
5	9455.02	PYPER LAKE - WEST F.S.R.	12		l	3	4	4-9	12														
5	9456.01	CARIBOU FLATS F.S.R.	13		m	2		4-9		4-9												SP	5000
5	9456.02	CARIBOU - NORTH F.S.R.	1		l	2																	
5	9456.03	CARIBOU - EAST F.S.R.	1		l	3																	
5	9456.04	CARIBOU - SOUTH F.S.R.	1		l	2																	
5	9456.05	CARIBOU - MCCLINCHY SOUTH F.S.R.	1		l	2																	
5	9456.06	CARIBOU - F.S.R.	6		l	2																	
5	9457.01	ONE EYE LAKE F.S.R.	4		m	2						1					y		3000		ditch / drain		
5	9458.01	TATLA LAKE F.S.R.	4		l	3						1											
5	9459.01	TWO LAKES F.S.R.	1		l	3						1											
5	9460.01	ALEXIS LAKE F.S.R.	3		l	2						1											
5	9462.01	SAPEYE F.S.R.	4		h	1	6	4-9	12			1			y		y		6000		ditch / drain		
5	9539.01	ABUNTLET LAKE F.S.R.	3		l	2																	
5	9757.01	ANEKO CREEK F.S.R.	2		l	2																	
5	9765.01	KLINAKLIN RIVER F.S.R.	2		l	2																	
5	9766.01	TETE ANGLES CREEK F.S.R.	3		l	2																	
5	9767.01	PUNTZI CREEK F.S.R.	5		l	2																	
5	9768.01	SUCKER LAKE F.S.R.	4		l	2																	
5	9870.01	BEEF TRAIL F.S.R.	1		m	2																	
5	9871.01	BEEF TRAIL - SOUTH F.S.R.	2		l	2																	
5	9896.01	TETE ANGELA SOUTH F.S.R.	2		l	2																	
5	9896.01	TETE ANGELA SOUTH - BRANCH 2 F.S.R.	4		l	2																	
5	9896.03	TETE ANGELA SOUTH - BRANCH 3 F.S.R.	10		l	2																	
		SUB TOTAL =	**1840**	**271**											to address fish pass/sediment =				**$276,000**		deactivation =		**$19,000**
															Total District Priorities =				**$295,000**				
															note: for bridge cost structure = $26,000 approach = $10,000								

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 8
STRENGTHENING SUSTAINABLE FOREST MANAGEMENT

September 30, 2000

TABLE OF CONTENTS

PART 8 STRENGTHENING SUSTAINABLE FOREST MANAGEMENT COMPONENT

8.1 REGIONAL SOURCE DOCUMENT 3
8.1.1 Regional Context for Strengthening Sustainable Forest Management *3*
8.1.2 Sources and Process Used *3*
8.1.3 Status of Strategic Land Use Planning *3*
8.2 KEY REGIONAL SSFM ISSUES 5
8.3 KNOWLEDGE STRATEGY 7
8.4 REGIONAL SUMMARY OF RECOMMENDATIONS 24
8.4.1 Project Summary Table *24*
8.5 RESEARCH PRIORITIES 29
8.6 PROVINCIAL PRIORITIES 30
8.7 TRANSITION PROJECTS 30
APPENDIX A. CONTACT AND SUPPORT PERSONNEL 31
Senior Managers Group *31*
SSFM Planning Team *31*
APPENDIX B. SUPPORTING REFERENCES 32
B.1 Publications *32*
B.2 SSFM Project Descriptions *32*

8.1 Regional Source Document

8.1.1 Regional Context for Strengthening Sustainable Forest Management

Sustainable Forest Management is defined by the Canadian Council of Forest Ministers (1992) as "management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social and cultural opportunities for the benefit of present and future generations." The Strengthening Sustainable Forest Management (SSFM) strategic objective sets out to meet that definition by funding projects that will develop tools and information for achieving sustainable forest management. The proposed projects outlined in this section followed a process used in the Cariboo Forest Region (described in 8.1.2) to develop and prioritize proposed projects. During this process, which was conducted from June to September, 2000, the concept of sustainable forest management, and the means to strengthen it by recommending priority projects, were kept in the forefront.

8.1.2 Sources and Process Used

The process for developing and ranking SSFM proposals in the Cariboo Forest Region followed eight steps:

1. Orientation of the SSFM strategic objective for agency and industry representatives, June 22.
2. Establishment of the SSFM regional planning team, June 22.
3. Senior managers meeting to define and rank issues relating to SSFM, June 22.
4. Setting of project ranking criteria (Figure 1) by the planning team, based on SSFM guidelines and senior managers' issues and priorities, July 25.
5. Submission of 52 SSFM project proposals from planning team members and others by August 8.
6. Proposal review and ranking by SSFM planning team, August 21.
7. Senior managers review and revision of project ranking, September 19, based on assigning high priority to projects under way and ranking remaining projects by total score (with no regard for the "management priority factor").
8. Submission to FRBC of SSFM projects recommended for funding in the Cariboo RMP, September 30.

8.1.3 Status of Strategic Land Use Planning

Forest resource management in the Cariboo Forest Region is directed by a Cabinet-approved Higher Level Plan, the Cariboo-Chilcotin Land Use Plan (CCLUP) (Province of British Columbia, 1995). CCLUP delineates four land use zones and sets targets for a wide range of resource values. Sub-regional planning is currently under way in parts of the region to refine CCLUP targets and more specifically direct resource management planning and activities.

Ranking Criteria and Scoring for Proposed SSFM Projects

Sustainable Forest Management Benefits in Relation to Senior Manager Issues (60%)		
Criteria	**Proposal Location**	*Scores*
1. What is the potential impact of this project on the issue? - Reduces risk to biodiversity, water quality/quantity, air quality. - Increases certainty about long-term sustainability of harvest level/cut. - Improves ability of AAC to incorporate environmental considerations. - Reduces constraints on harvest levels through better ability to incorporate/understand risks to environment.	C. Relationship to SFM J. SFM D. Use of Improved Knowledge	H = 20 M = 10 L = 5
2. Severity of consequences to environmental values, timber and non-timber forest resource issues of not doing the project.	C. Relationship to SFM, J. SFM	*For each:* H = 10 M = 6 L = 2
3. Geographic scope of benefits.	A. Overview, K. Location	
4. Scope of benefits to help address other issues.	A. Overview, B. Use of New Knowledge, C. Relationship to SFM	
5. Timeframe of impact (immediate/ST/LT) – addresses current issue or ones that will likely need addressing in next decade.	L. Timeframe	Imm = 10, ST = 6, LT = 2
Project Feasibility and Likelihood of Success (40%)		
6. Project Status (ongoing or new)	Summary Table, column 4, Project Status	Ongoing = 10 New = 7
7. Number of years for project results or products available for use in CCLUP or applicable SRP implementation, TSR, etc. (in 2001 or later).	Summary Table, column 9, Ability to Use Knowledge	1 yr = 10, 2 yrs = 8, 3 yrs = 6, 4 yrs = 4, 5 yrs = 2 ≥ 6 yrs = 0
8. Degree to which project requires little or no coordination with other projects or serves as a driver for subsequent knowledge development.	E. Challenges and Constraints, H. Project Description, I. Function	High driver or stand-alone project = 5 Medium Coord = 3 Low Coord'n = 1
9. Project requires driver for completion.	Summary Table, column 5, Knowledge Investment	Yes = 2 No = 5
10. Project methodology has broad support and proposal provides a comprehensive review of current information to support the methodology.	Summary Table, column 11, Probability of Success; F. Existing Information; H. Project Description	Good = 10 Medium = 6 Poor = 2
	STEP 1. TOTAL POINTS	**Max. 100**

STEP 2. "Management Priority Factor" from Senior Managers Issues and Priorities

Priority	**CCLUP Issues**	**Aboriginal Issues**	**TSR Issues**
High (Multiply total points by 1.0)	- Enhancement Strategies - Tool Development - Biodiversity Committee - Wildlife - Mountain Pine Beetle (MPB)		- New Models
Medium (Multiply total points by .75)	- Watershed Committees - Access Management - Other Significant Species		- Current Management Practices - Site Index Impacts
Low (Multiply total points by .5)	- Visual Targets - Wilderness Fisheries - Water Quality and Quantity	- Information Format	- Ingress on Roads and Landings - Non-Recoverable Losses - Short-Term Timber Availability

STEP 3. Calculation of Final Score by Multiplying Total Points and Management Priority Factor

Figure 1. Ranking criteria and scoring for proposed SSFM projects.

8.2 Key Regional SSFM Issues

The key regional SSFM issues were prepared by agency and industry senior managers, and they formed the basis for developing and ranking proposed SSFM projects. A summary list with a description of issues, their priority, their significance for SSFM, the scope of the problem encompassed by the issue, and the geographical area affected, is provided in Table 1.

Table 1. Summary list of SSFM issues

Priority	Issue	Description	Significance for SSFM	Scope	Geographic Area
High	CCLUP Enhancement Strategies	Given that CCLUP requires enhancement strategies to meet targets and address knowledge gaps, financial support is required to address the following committees and associated issues: • Identification of enhancement opportunities, as required by the 90-day report. • Timber Enhancement Strategy Committee (TESC), established June 27. • Grasslands strategy committee, including AUM targets and conifer encroachment.	Provides key information for successfully implementing CCLUP based on SFM.	Forms the basis for implementing CCLUP.	Region-wide
	CCLUP Tool Development	Develop a strategic plan for the Cariboo-Chilcotin (based on the LUCO LUP implementation plan measurement) to develop tools to monitor the achievement of all CCLUP values and targets for timber and non-timber (including biodiversity, backcountry and recreation, and community stability) attributes. Monitor the effects of implementing current and new targets on existing targets by coordinating and integrating the various strategies, and rationalize and reconcile targets and their impacts on each other. Link with RRB monitoring sub-committee. Fund projects that similarly support sub-regional planning processes and monitor achievement of these regional targets.	Provides key information for successfully implementing CCLUP based on SFM.	Forms the basis for implementing CCLUP.	Region-wide
	Biodiversity Committee	Continue support for the Biodiversity Committee, including: • Landscape-level analysis and monitoring • Attribute management • OGMA management and forest dynamics as a critical issue		Committee provides technical expertise for implementing Biodiversity Guidebook	Region-wide
	Wildlife	Meet wildlife targets and objectives by addressing knowledge gaps identified by committees for: • Mule deer • Caribou (including caribou conservation and wolf predation as critical issues) • Identified wildlife (grizzly bear, etc.)		Committees provide technical expertise to meet CCLUP targets and implement guidebooks	Region-wide
	Mountain Pine Beetle	Continue support for the Cariboo Forest Region Bark Beetle Strategy Committee in relation to critical issues that would impinge on meeting CCLUP targets, including mountain pine beetle salvage, sanitation and control tactics and their effect on meeting CCLUP targets (eg. caribou management and OGMAs) relative to timber supply.			Region-wide, but most notably in Quesnel and Williams Lake TSAs

Priority	Issue	Description	Significance for SSFM	Scope	Geographic Area
High (cont.)	Timber Supply Review—New Models	Develop tools to model (or calibrate existing models) for analyzing: • Transition of volume-based to area-based regulation. • Application of a range of silvicultural systems. • Habitat supply relative to specific indicators.			Region-wide
Medium	Watershed Committees	Continue support for watershed committees, and implement recommendations from watershed assessments on watershed condition for the watersheds named in CCLUP.			Region-wide
	Access Management	Meet a variety of CCLUP targets (eg. backcountry and recreation, timber, etc.) through access management.			Region-wide
	Other Significant Species	Support the development of strategies for other significant species named in CCLUP (ie. red- and blue-listed species).			Region-wide
	Current Management Practices	Develop tools to model current management practices in TSR (including CCLUP strategies).			Region-wide
	Site Index Impacts	Address the impact of site index on growth and yield relative to outdated or missing forest inventory information.			Region-wide
Low	Visual Targets	Continue projects for visual targets (as outlined in the 2000/2001 RMP) to refine current visual inventories, through the development and use of more sophisticated techniques in visual landscape design and analysis, so that only the amount of area required to meet visual targets is constrained.			Region-wide
	Wilderness Fisheries	Identify knowledge gaps related to CCLUP on quality wilderness fisheries.			Region-wide
	Water Quality and Quantity	Maintain water quality and quantity targets by addressing deficiencies in the hydrometric/water quality monitoring network.			Region-wide
	Aboriginal Issues—Information Management	Improve access to the timber land base through Traditional Use Studies (TUSs), and develop tools to use existing information in an efficient and usable form (including strategic consultation).			Region-wide
	Ingress on Roads and Landings	Assess the ability and impact of ingress and rehabilitation strategies to offset loss of the forest land base from roads and landings.			Region-wide
	Non-Recoverable Losses	Determine non-recoverable losses.			Region-wide
	Short-Term Timber Availability	Address short-term timber availability relative to community stability.			Region-wide

8.3 Knowledge Strategy

Table 2 provides a summary of the knowledge strategy for addressing the SSFM strategic objective. This table provides a comprehensive summary of the SSFM issues for the 2001/2002 RMP and the projects proposed to address them. Priorities and ranking are also included.

Table 2. SSFM knowledge strategy

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Biodiversity Strategy	Old Growth Management Areas	The forest attributes that best describe mature and old forests in selected ecosystems in the Cariboo Region need to be defined. This is an issue because forest age (i.e. currently available on forest cover maps) is an inadequate descriptor of true mature and old forests. Targets in the CCLUP have been set for certain amounts of mature and old forest by zones but the definition of these targets has yet to be determined. This is a critical definition that the Biodiversity Committee is currently working on.	**Old and Mature Attribute Definition** Compilation of data relevant to attribute- and process-based definitions of seral stage in the Interior Douglas-fir biogeoclimatic zone and subzones within the Cariboo Forest Region. Field testing of attribute-based seral stage definitions for the IDF subzones will be conducted. Seral stage definitions will be developed and tested for other forest types and silvicultural systems over the proposed five-year duration of the project.	7	$15,000	1	H	4
			Demonstration Sites for Old Growth Management Treatments to speed the recovery of old forest characteristics are not well developed. This project will demonstrate some of the techniques available to local forest managers for speeding recovery of some of the most important ecological attributes needed by wildlife. A site will be chosen within Weldwood's operating area in the Horsefly Forest District, but the techniques demonstrated will be applicable throughout the region.	6	$15,000	1	H	34
	Seral Targets	Seral targets for "mature plus old" and "old" forests are expected to be met under CCLUP. Natural disturbance factors such as mountain pine beetle, wind damage and fire are expected to erode the areas currently set aside. Maintenance of these seral targets therefore depends on recruitment into mature and old seral from younger age classes. In some landscape units, the disturbance history has resulted in an imbalanced age structure with some mature and old and large areas of early seral. Where existing mature plus old stands are lost to natural disturbance, there is little mid-seral to recruit. There is concern that seral targets for Mature plus Old and Old cannot be achieved given the current age structure of the forests in each Landscape Unit (LU) by Natural Disturbance Type (NDT) across biogeoclimatic zones and the probability of attrition through natural disturbance. Spatial representation of biodiversity attributes cannot be measured at the TSA level (too broad) and should be measured at the Landscape Unit level (an ecological unit specified by the Biodiversity Guidebook.	**Temporal Achievement of Mature plus Old and Old Seral Targets** For selected Landscape Units, compile and graph the age class information over time by LU, NDT and BEC zone.	5	$15,000	1	H	19

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Biodiversity Strategy (cont.)	Seral Contribution of MPBs and PFTs	Stands susceptible to Mountain Pine Beetle (MPB), as well as Problem Forest Type (PFT) stands, are both scheduled for priority harvest in the Cariboo Forest Region. The former are part of ongoing forest health and timber salvage action, and the latter is potentially a mitigating strategy to minimize the AAC falldown effect (especially in the Williams Lake TSA). These two stand types are believed to make up a significant portion of the mature and old forest in SBPS, MS and IDF pine ecosystems, primarily in the Chilcotin and Quesnel Forest Districts, but the extent of that contribution is not known. Targeted priority harvest of these stand types represents potential risks to meeting mature/old forest biodiversity targets, but the extent of these risks is also unknown. The purpose of this project is to address these two knowledge gaps by: • assessing the current and future contribution of these two stand types to mature/old forest biodiversity targets in the affected landscapes, primarily in Quesnel and Chilcotin Forest Districts, • assessing the impacts of various harvest levels of MPB and PFT stands on mature/old forest biodiversity targets, and • identifying options at both the TSA and landscape unit levels for balancing forest health and AAC maintenance/community stability issues with CCLUP biodiversity targets.	**Seral Contribution of Mountain Pine Beetle and Problem Forest Type Stands in the Cariboo Forest Region** The first year of the project will have obtained initial information regarding the current contribution of MPB-susceptible and PFT stands to mature and old seral biodiversity targets in the affected NDT3 ecosystems. This will be based primarily on GIS analysis of the existing forest inventory, supplemented with initial fieldwork assessing the seral status of these stands with respect to mature and old forest attributes. This second and final year of the project will: • link with the results of the Old and Mature Forest Attributes project (focusing on Douglas-fir NDT4 ecosystems) to provide a more accurate and useable framework for assessing seral status and contribution of NDT3 ecosystems, and • strategically supplement field data if required to make refinements with respect to definition of seral attributes and status, and • project the seral contributions of MPB and PFT stands over time in association with harvest levels to identify options for balancing MPB/PFT stand harvest levels with biodiversity.	8	$25,000	1	H	27
	Patch Size	CCLUP and the Regional Biodiversity Strategy have identified the need for spatial-based planning to achieve biodiversity targets. This includes the analysis of the size, location and timing of forested patches and openings.	**Patch Size Analysis** Analysis of BEC units in the Quesnel TSA within landscape units with greatest history of development, starting in the western portion of the TSA.	3	$50,000	1	H	26
	Coarse Woody Debris		**CWD Retention and Recruitment** Determination of the amount of coarse woody debris (CWD) being retained on site after harvesting, and additional recruitment sources of CWD. The geographic scope for this project is the Quesnel TSA. Weldwood of Canada has operations in most of the biogeoclimatic zones present in the Quesnel TSA.	2	$30,000	1	H	41

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Enhancement Strategies	Timber Enhancement Strategies	The Cariboo-Chilcotin Land Use Plan (CCLUP) divided the resource land base into three different resource development zones, depending on intensity of use: Enhanced, Special and Integrated. - The Enhanced Development Zone includes areas where economic benefits and jobs will be increased through intensive management development. Forest productivity will be maintained and enhanced through intensive reforestation, spacing, pruning, thinning and new forest practices. - The Special Resource Development Zone is designated where significant fish, wildlife, ecosystem, backcountry recreation and tourism values exist. Timber harvesting, mining and grazing will take place in this zone in a manner that respects these values. - The Integrated Resource Management Zone includes areas that will be dedicated for sustained integrated resource use. Timber Enhancement targets were not included in the CCLUP or the subsequent 90-day implementation report. These were to be developed in the ongoing process of implementing the Land Use Plan. General opportunities for enhancement of grazing, fish and wildlife and tourism were identified in the appropriate strategy statements.	**Timber Enhancement Strategy Committee (TESC)** For each TSA in Cariboo Forest Region, TESC will: 1. Identify timber enhancement opportunities. 2. Develop Timber enhancement strategies. 3. Conduct forest estate modelling, using the most current TSR data package as the base case, testing the impact of the proposed strategies on short-, mid- and long-term harvest levels. 4. Refine the strategies to provide the optimum proposed harvest levels.	39	$500,000	3	H	10
CCLUP Tool Development	Baseline Data		**Terrestrial Resource Inventory Mapping (TRIM II)** The issue is that the base maps for much of the Cariboo Forest Region are hopelessly out of date, which compromises the ability of licensee and agency staff to properly plan and evaluate activities, projects and status of elements critical to the CCLUP and to FRBC. This project proposes to continue a multi-year project to update 1:20,000 base maps (roads, water features, topography) for the Cariboo Forest Region and to produce orthophotos by UTM mapsheet.	32	$500,000	3	H	2
			Resource Information Management Framework Using the Horsefly Forest District as a geographic subset of the Cariboo Forest Region, standardize all available resource information that is digitally available, develop the data links to facilitate data sharing, and provide easier access for analytical use and communications.	38	$95,000	3	H	32

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Fisheries	Fisheries	Reconnaissance 1:20,000 surveys provide information on fish distribution, relative abundance and various habitat parameters. The information is suitable for use in landscape and forest development planning. In addition, this inventory methodology has been developed so that data collected from randomly selected field sites within the watershed can be modeled to provide interpretative information for the entire watershed. An intensive inventory program is required in order to address the high portion of Cariboo Region streams that have not been inventoried.	**Reconnaissance 1:20,000 Fish Inventory** Industry-led high priority 1:20,000 Fish and Fish Habitat Inventories will provide the information on watersheds where forest harvesting is underway or planned. Reconnaissance 1:20,000 surveys provide information suitable for use in landscape and forest development planning. In addition, this inventory methodology has been developed so that data collected from randomly selected field sites within the watershed can be modeled to provide interpretative information for the entire watershed. Watersheds to receive inventory have been prioritized by MELP, Forest companies and DFO. Annual re-evaluation of the priority watersheds will be required to address changes in forest harvest locations.	49	$1,500,000	5	H	1
			Digital Roll-up Fish Inventory A substantial amount of fish and fish habitat inventory information has been provided in recent years through FRBC Operational Inventory, Fish Stream Classifications and other initiatives. In order to provide this data to various user groups, the information has to be rolled into databases, web sites and documents that are easily retrievable. In addition, various aspects of the data require interpretation, involving sophisticated models (eg. Fish Habitat Assessment Tool [FHAT]), before the information is useable for planning processes.	22	$40,000	3	H	9
			Horsefly River Sediment Monitoring In 1993, proposed road building and timber harvesting in the upper part of the watershed prompted the resource management agencies and forest licensees to commit to a program of watershed assessment and monitoring. One of the results has been suspended sediment sampling at a number of locations through the spring and summer of every year since 1994. Funding for this program has been provided by forest licensees. The purpose of this proposal is to secure and consolidate a funding source to ensure the continuation of this program. The objectives are to: 1. Characterize suspended sediment concentrations at various locations in the Horsefly River drainage under the current and future land use conditions in the watershed; 2. Provide some discrimination of the above with respect to natural, harvested, and agricultural areas; and 3. Establish a baseline to enable the detection of future changes in sediment concentrations.	26	$12,000	10	H	20

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Fisheries (cont.)	Fisheries (cont.)		**Stream Shade** The purpose of this project is to inventory stream shade across a sample of streams with different topographic and vegetation features. This will be used to develop a predictive relation between surrogate variables and stream shade and, in conjunction with other projects, to test stream temperature models and riparian management scenarios.	29	$19,000	4	H	3646
	Intensive Fish Inventories	Intensive-level inventories are required to address priorities of the CCLUP and the Regional Fisheries Branch. These will be primarily carried out by MELP but forest companies are encouraged to also conduct intensive studies to ensure that concerns about species-specific fish populations are addressed.	**Bull Trout Inventory** Bull trout are sensitive to changes in their habitat, especially in relation to increases in stream temperatures. In order to better understand the life history and habitat requirements of bull trout in the Cariboo region, studies will be carried out on several watersheds: Cariboo River, Cottonwood River and Blackwater River. Studies will be set using RIC standards and will include spawner timings, rearing areas, size and age, etc. A radio tagging program will be set up on one of the watersheds to record specific movements of adults during the spawning season. Habitat parameters will be identified and specific information of stream temperatures will be collected. This information will build on information being collected by Weldwood within the Cariboo watershed (Tuckett Creek).	23B	$150,000	3	H	47
			Kokanee Inventory Kokanee use both river and shoal areas for spawning in the Quesnel Lake watershed. These spawning areas are very susceptible to degradation resulting from development of the adjacent land base. Inventory of the adults using the various spawning areas has not been carried out in recent years and has never had an extensive study undertaken. Quesnel Lake kokanee will be inventoried at the juvenile stage by echo sounding, trawls and DNA work. Spawning areas used by kokanee adults will be carried out by aerial counts, boat reconnaissance and dive studies. RIC standards will be adhered to where available.	23A	$75,000	2	H	49

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Fisheries (cont.)	Lakes	There are approximately 3280 lakes within the Cariboo Forest Region (MELP Region 5 portion) that are greater than 5 ha. In addition to providing important fish habitat, many of these lakes are valuable for recreation. Knowing the fish habitat importance and understanding the recreational significance of lakes are the main objectives of the Lakes Inventory program. Some of the required lakes inventory information will be collected during 1:20,000 watershed-wide lake and stream inventory; however, most forest companies are opting out of lakes inventory and MELP will have to address the problem. Key lakes outside of forest company priority watersheds must be inventoried to provide information for Lakes Classification Committees and provide baseline information to support recreational management and other identified objectives of land use planning. Information from winter oxygen testing of lakes is required for planning of full reconnaissance-level inventory as well as integration into the Lakes Classification process.	**Lakes Inventory** Lakes inventory will continue at a rate of 30 lakes per year to address the important lakes in the next 5 to 10 years. MELP will provide the key role in determining the lakes to be inventoried and will contract out the work. Information will be collected to RIC standards. Information from the surveys will be integrated into regional and provincial databases, and interpreted information will be provided to the Lakes Classification Committee.	24A	$200,000	10	H	15
			Winter Limnologies Winter limnologies will be carried out on 75 to 100 lakes in the Cariboo Region to determine the capability of selected waterbodies to support fish through the period of winter ice-over. The work will be carried out by MELP staff during the period of lowest oxygen concentrations (early to mid March). Information will be collected, analyzed and integrated into the Cariboo Region Winter O2 Database. Interpreted information from the database will be provided to Lakes Classification Committees and used for planning future 1:20,000 lake inventory. RIC standards will be adhered to throughout the project.	24B	$15,000	4	H	16
			Lakes Classification A key component of the Lakes Classification process is the integration of fish and fish habitat data. Information on the lakes' capability to produce fish, fish and fish habitat data, and recreational use will be provided by MELP to the Lakes Classification Committees.	24C	$50,000	4	L	51

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Wildlife	Mule Deer	Mule deer are a regionally important species. They require mature and old stands with good snow interception and forage supply in order to survive the Cariboo winters. These critical stands also have high timber values. Mule Deer Winter Range (MDWR) Management Plans, which will address timber access and sustainable harvest while managing for mule deer habitat, are required for 98 winter ranges across the Cariboo Forest Region. Stand structure mapping is the first step in gathering ecological information required to prepare the management plans. Stand structure mapping has been completed for 26 MDWRs. Preparation of the MDWR Management Plans is the responsibility of the MDWR Working Group. Support is required for creation of the management plans in the form of: helicopter time to conduct flights over MDWRs to apply stand structure mapping results and look at any suspected problems (which cannot be tied to the project since the timing of management plan creation and project completion always crosses fiscal deadlines and the money cannot be carried over). As well, funding is required for GIS support for dozens of iterations of maps required for the Plans (i.e. zone maps, short and long term objective maps etc.), data compilation, and sampling of basal area (and other attributes) in the IDFdk3 area south of 100 Mile and transition zones away from the typical IDF wintering areas (this will assist with creation of rules regarding harvesting availability, methods etc.).	**Stand Structure Mapping** Stand structure mapping projects involve: air photo interpretation and ground truthing of slope, aspect and stand structure attributes important to mule deer; database creation; and GIS mapping. Once the mapping is complete, MDWR management planning begins. Preparation of a management plan is a very involved process. The winter range is divided into management zones, preliminary habitat objectives are set, the data are analyzed and compared to the CCLUP Integration report and to the Mule Deer Strategy and Mule Deer handbook, iterations of maps are produced, and the long-term objectives and transition strategy evolve.	10	$180,000	5	H	3
			Silvicultural Systems for Very Deep Snowfall MDWR This is a pilot project to explore various opening sizes that could be used in conjunction with group selection, patch cut or clearcutting silvicultural systems on very deep snow pack MDWR. The main objectives are to ensure regeneration success and maintain mule deer use. A study site, situated on MDWR, has been selected and pre-harvest data collection began in 1996. Twenty percent of the 90 ha block was harvested in openings, roads and landings in the fall of 1997. Four opening sizes were harvested: 0.25 ha (15m x 180m), 0.50 ha (30m x 180m), 1 ha (60m x 160m) and 2 ha (60m x 320m). Opening widths were chosen to represent 0.5, 1 and 2 tree heights. Same-sized openings are paired on the block according to soil moisture regime: one opening is treated as the control and the other opening will receive a specific treatment (eg. site preparation, different slope orientation). All openings are planted with Douglas-fir, and natural regeneration ingress will be monitored along with seedling survival and growth. Seed fall and vegetation response will also be monitored in a portion of the openings. Measured variables (eg. seedling growth, vegetation cover) will be compared between treatment and control openings using t-tests.	9	$5,000	10	H	8

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Wildlife (cont.)	Mule Deer (cont.)		**Mule Deer in the Wetbelt** Much is known about mule deer use on drybelt winter ranges in this region; however, little research has been done in the wetbelt and transition winter ranges. Management plans are required for these winter ranges under the Mule Deer Strategy of the CCLUP. Any information that can be gathered on mule deer use, habitat conditions and silvicultural systems within these winter ranges will be helpful to the planning process throughout the wetbelt, the eastern part of the region in all three TSAs. A graduate student will be supported to do a Masters thesis on this topic. The student will write the proposal and thus clarify exactly what the project will entail. The topic should focus on mule deer use, habitat conditions, and/or silvicultural systems. Snow surveys under different canopy conditions are a potential topic. The proposal will be discussed with Weldwood, MELP, the MOF Research section and the UBC Alex Fraser Research Forest.	11	$20,000	1	H	24
	CCLUP Caribou	Caribou populations within the region are considered regionally, provincially and nationally significant. The entire regional caribou population is considered threatened nationally, while mountain caribou in the eastern portion of the region are red-listed provincially. The CCLUP Higher Level Plan specifically provides for special management of several populations within the region (eastern caribou and Itcha-Ilgachuz caribou).	**Mount Tom Adaptive Management** The Mount Tom adaptive management trial represents the third phase (after the pilot and replicated research phases) of our research to develop integrated solutions to managing caribou habitat within a managed forest environment. This phase will apply the silvicultural system at a landscape scale which will allow testing of the caribou response, as well as examining the operational logistics (FERIC will collect cost data) of the system. Approximately 1200 ha will be fully developed over the next few years, while over 2000 ha has been deferred from harvest to serve as a control for the trial. A co-operative agreement with MELP has been established to track the response of radio-telemetry equipped caribou to the development. Harvesting is scheduled to start in phase 1 in the winter of 2000/01. (It was delayed from last winter due to bark beetle salvage.) We were able to obtain base MOF regional funds, and FRBC funds via Weldwood Ltd., to collect pre-treatment lichen abundance and distribution data, and to stratify the block by ecological site series. Site preparation and planting options are currently under discussion. Approximately 1200 ha will be fully developed with modified harvesting over the next few years while over 2000 ha have been deferred from harvest to serve as a control for the trial. All prescriptions will be based on a 33% volume removal but the size of the removal group varies between 0.1 to 1.0 ha.	12A	$50,000	20	H	6

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Wildlife (cont.)	CCLUP Caribou (cont.)		**Satah-Chezacut Adaptive Management** The modified harvesting practices tested in the research and adaptive management alternative silvicultural systems trial near Satah Mountain are being implemented operationally by Riverside Forest Products and Tsi Del Del, the major licencees in the northern caribou habitat within the Williams Lake TSA. There are now approximately 2000 ha harvested using the alternative silvicultural systems. Harvesting was completed in the Satah adaptive management block (600 ha) in March 1998. Harvesting in the second adaptive management block (about 800 ha), located below Baldface Mountain, was completed by March 2000.	12B	$26,400	20	H	7
			Caribou Strategy Monitor and report on caribou population dynamics and habitat use. This will include: 1. Ongoing population surveys of all caribou herds within the region. 2. Monitoring of habitat use by radio-collared caribou in relation to adaptive management trials in the vicinity of Mt. Tom within the Quesnel District. 3. Monitoring of habitat use by radio-collared caribou within the Charlotte Alplands herd. 4. Monitoring of habitat use, at the stand level, of caribou in relation to adaptive management trials in the Satah Mountain area. Monitoring of wolf habitat use and foraging strategy, in relation to timber harvesting and road development, within the range of eastern caribou.	13	$310,000	5	H	25
	Red- and Blue-Listed species	CCLUP implementation requires inventories to identify species and habitats at risk and their management needs. Also, consistent with the CCLUP targets, there is a need to conduct site assessments in order to establish Wildlife Habitat Areas (WHAs) as required to protect these species and habitats. This type of inventory can be conducted anywhere within the region (at the Landscape Unit scale). The highest densities of species and habitats at risk occur in the grasslands making these areas high priority to MELP. Conflicts may arise due to competing interests for the grassland habitats (i.e. red and blue species/habitats vs. range use vs. forest encroachment [burning]).	**Inventory of: Red and Blue Listed Species and their Habitats, Rare Plants and Rare Ecosystems** • Conduct inventories (presence vs. non-presence or relative abundance depending on the species) of wildlife species at risk and Identified Wildlife in the Cariboo Region to meet CCLUP and FPC obligations. Multiple species can be inventoried in the same area. • Conduct detailed site assessments in order to determine WHA requirements for Identified Wildlife.	4	$150,000	5	H	12

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Wildlife (cont.)	Grizzly Bear	Grizzly bear are an identified wildlife species in the Identified Wildlife Management Strategy, and parts of two population units within the region are considered threatened. The CCLUP Higher Level Plan implementation requires research and inventory on grizzly bear habitat and habitat protection needs (p. 161) to support resource management and future integrated resource management decisions. Population and habitat inventories are required to determine whether population unit objectives are being met with the land use management strategies implemented through the CCLUP. Habitat inventory – the mapping and evaluation of spring and summer grizzly bear habitat in important grizzly bear watersheds – will also provide important habitat information for planning purposes and CCLUP implementation.	**Grizzly Bear Population and Habitat Inventory Requirements** • Map and classify grizzly bear habitat and conduct overall habitat effectiveness evaluations in important grizzly bear watersheds in order to be able to evaluate habitat protection opportunities and individual WHA candidates for foraging and security areas. • Conduct inventories of grizzly bear populations in the interior Cariboo population to establish knowledge of current population size and relative abundance, and to determine areas of critical grizzly bear habitat, with the priority for inventory based on the current population status (i.e. threatened populations have higher priority).	15	$100,000	5	H	13
	TEM	There has been a great deal of time, energy and money spent on Terrestrial Ecosystem Mapping (TEM) over the past five years in the Cariboo Region. Most of these projects were conducted during the same timeframe and thus could not build upon the knowledge of the adjacent project, especially the wildlife models, assumptions and ratings. Most of these projects are nearly complete, but have not passed the final quality assurance checks. There are many reasons for this delay and there has been considerable extra effort on everyone's part to work towards completion of these projects. Due to the timing of all of these projects there are adjacent projects which have different wildlife ratings for the same ecosystem units. The main reason that the wildlife ratings are not approved and synchronized is due to timing of past projects and fiscal year end constraints. Ideally, one of these projects should be put over two fiscals: Year 1 for TEM completion and Year 2 for the wildlife portion since it cannot be fully reviewed until the TEM portion is complete. This timing problem has increased the time required for deliverables considerably because any errors found in TEM portion affect the wildlife portion so edits must be made in both. However, because of the size of these projects and different individuals completion different portions, the edits were not always made. This makes for many versions of products that do not match up.	**Completion of Terrestrial Ecosystem Mapping and Regional Consolidation of TEM Wildlife Interpretations** A contractor will be hired to finalize the TEM mapping. GIS support and a wildlife biologist will then be required to amalgamate all wildlife ratings from adjacent projects into one massive database, rate each ecosystem unit for wildlife, make wildlife maps, discuss/analyze maps/ratings tables with MELP quality assurance staff and reprint and re-analyze until the maps are correct. The final task will be training of all potential users by a qualified professional.	45	$70,000	1	H	28
	Mountain Goat	Mountain goats are considered to be both regionally and provincially significant species and are included in the Identified Wildlife Management Strategy (IWMS). Although some population inventories have been conducted in recent years, there are still considerable knowledge gaps for some areas and populations. Population and habitat inventories are needed to aid in sub-regional and landscape planning levels. Critical areas of importance are the identification of natal areas, winter ranges and mineral licks, as well as population monitoring. Geographic area would involve the Chilcotin ranges and Quesnel Highland.	**Mountain Goat Habitat and Animal Inventory** • Conduct baseline animal inventory for those mountain blocks where no inventory is available or the existing inventory is so outdated that it is considered suspect. • Map and classify winter and spring habitat to identify critical winter ranges and natal areas.	16	$110,000	5	H	33

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
CCLUP Wildlife (cont.)	Furbearers	A major shortfall of information exists on the distribution, abundance and habitat requirements (both stand and landscape level) for all biogeoclimatic zones of the 17 different species of furbearers located within the Cariboo Forest Region. The limited information base is especially concerning for low density and low reproductive species such as fisher and wolverine, and for species that require large home ranges, such as lynx and bobcat. As well, fisher and wolverine are blue-listed species.	**Cariboo-Chilcotin Furbearer Inventory** This project will see a continuation of the furbearer snow tracking transect methodology at the same locations previously established in the Anahim Lake area. The history of this project is that in the winter of 1998/99 a pilot project was established in the Anahim Lake area. Winter snow tracking of furbearers in different biogeoclimatic zones (at pre-established transect sites) was carried out in 1999/2000 and will occur in the winter of 2000/01 in co-operation with Yun Ka Whu'Ten Holdings Ltd. and MELP.	14	$100,000	3	H	35
	Moose	As a requirement of the CCLUP, wetlands designated as important to moose, especially those utilized during the winter months, need to be identified in areas of high importance to moose in the Cariboo Region. Forested buffers around the wetlands and forest harvesting techniques within or adjacent to buffers will need to be developed. The purpose of the forest buffers adjacent to wetlands is to meet thermal and security cover requirements for moose. Several projects are currently underway to classify wetland types on 1:20,000 mapsheets and to develop criteria to determine the importance of different wetland types to moose. These are co-operative working projects between Riverside Forest Products, Yun Ka Whu'ten Holdings and MELP. In order to aid in determining adequate buffer width and characteristics on the perimeter of wetlands to meet moose thermal and security cover requirements, additional information on actual moose use of different wetland types and their associated forest buffers is required. The CCLUP suggests a 200 m buffer on the perimeter of important wetlands may be required on key wetland and riparian habitats. To aid in determining an appropriate buffer width on the perimeter of key wetlands, ten GPS collars will be placed on moose in the SBPS and SBS zones, east of Williams Lake, in December 2000. Additional GPS collars may be placed on moose in 2001 to increase the sample size. Approximately four fixes (locations) per day will be obtained on each animal's location by way of satellites over a two-year period. The data stored in each collar will be used to track moose locations and movements. This level of detail will enable criteria to be developed on moose use patterns in relation to wetlands and to help describe appropriate buffer widths around wetlands and riparian areas. This is a co-operative working project between Weldwood (100 Mile House and Williams Lake Divisions) and MELP. To further complement the wetland classification and GPS collar collection information, ongoing annual moose inventories are recommended, especially in areas where wetland classification has occurred. This component is an important part to the overall program because moose use of various wetlands will vary annually as a result of winter snow depths and temperature. The inventory information will aid in identifying areas of high moose concentrations and their association to wetlands in the area.	**CCLUP Moose Strategy – Objectives, Targets and Monitoring** Priority #1: Monitor, by way of GPS collars and winter trailing, moose habitat selection and movement patterns in relation to wetlands for two years (a minimum of two winters of data is required). (Note: If supplemental collars are put on in Dec. 2001 then it will be the wisest expenditure of money to conduct radio telemetry on those collared animals until the collar batteries expire (approximate life is one year) – project end date of March 2003). Based on this inventory work, co-operatively develop appropriate forest harvest management techniques with forest harvesting companies to ensure long term sustainability of moose populations in appropriate areas. Priority #2: Continue updating wetland classification mapping in select areas. Develop criteria to identify wetland and riparian habitats important to moose, especially during the winter period. Priority #3: Conduct aerial inventories in select areas to assess population parameters.	17	$160,000	2	H	36

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CCLUP Wildlife (cont.)	Other Species at Risk	The project will identify wetland capability and frequency of usage by selected cavity nesting waterfowl in the Riske Creek/Bechers Prairie area.	**Riske Creek Cavity Nesting Waterfowl Habitat Study** Assessing wetlands quality and recording incidence and site location characteristics of cavity nesting sites.	18	$5,000	2	H	38
Mountain Pine Beetle	Impact of Mountain Pine Beetle on CCLUP Targets	Mountain Pine Beetle (MPB) is a significant forest management issue in the Cariboo Region. The current infestation which started in 1992 has expanded into areas previously not attacked due to elevation and topography. The downside for this attack cycle is extreme, with survival rates in the winter of 1999 of approximately 73%, as compared with 16% in 1996 and 15 green attacked trees per red attack tree. Infested area has expanded from 459 ha in 1992 to 36,878 ha, containing 1,836,723 m^3, in 1999. Early reports for the Year 2000 MPB flight are showing an even greater attack ratio than in 1999. Significant action is needed to institute control and salvage of this attack cycle. A workshop of experts is recommended to allow for dissemination of the latest management strategies.	**Mountain Pine Beetle Workshop** A workshop of international experts to review the past methods of control and alternative approaches to management and control of MPB is needed. The delivery agent, through a qualified contractor, will be responsible for the organization of the workshop, which includes soliciting papers for presentation by acknowledged experts in MPB research and control, arranging for workshop facilities and for travel and accommodation for workshop participants; facilitation during the workshop, and preparation of a workshop report that will include papers presented, discussions and recommendations.	46	50,000	1	H	37
CCLUP Visuals	Visual Targets	Current visual inventories need to be refined so that only the amount of area required to meet the visual targets is constrained. Unrefined inventories do not permit the maximization of overlaps with other non-timber values and can result in unnecessary constraints in timber access and supply. This issue is applicable across the Cariboo Region and requires the development and use of more sophisticated techniques in the field of visual landscape design and analysis.	**CCLUP Visual Targets and TSR Modelling of Visual Targets** Refinement of existing visual resource inventories, using TRIM II, to more accurately define, spatially depict and allow analysis of visually constrained areas resulting from strategic planning.	31	$50,000	1	L	44
Water Quality and Quantity	Cariboo Region Automated Water Quality and Quantity Monitoring Network	A water quality and quantity automated monitoring program was implemented in 1998 to address regional information deficiencies outlined in the March 1998 Needs/Gap Analysis Reports for the MELP Cariboo Region: Hydrometric/Climate Network and Community Watershed Water Quality Monitoring Plan prepared by Klohn-Crippen Consultants Ltd. Deficiencies in the hydrometric/water quality monitoring network in the Cariboo region can result in the use of erroneous hydrometric parameters by timber licensees. This can result in environmental degradation or contravention of MELP's water quality objectives. In recognition of resource limitations for water quality monitoring in the hydrologically diverse Cariboo region, MELP has prioritized watersheds and placed key hydrometric/water quality stations in catchments of potential Community Watersheds and in actively harvested, high value fisheries streams. These priorities were based on the $200,000 FRBC-funded Needs/Gap Analysis referred to above.	**Operation of Automated Water Monitoring Network** A network of five automated water quality/quantity monitoring stations will be operated in the Cariboo region, continuing a program of data collection initiated in 1998. These stations are located on Bridge Creek upstream of Horse Lake, Sheridan Creek upstream of McLeese Lake, Windy Creek upstream of Jim Creek and Bowers Lake, Judson Creek upstream of Bridge Creek, and Dash Creek upstream of Churn Creek. These stations monitor the following parameters on a continuous basis: turbidity, pH, temperature, conductivity, water level and precipitation. Priority locations were chosen on the basis of cost and site accessibility, fisheries values, community watershed values, and in an effort to obtain information from a cross section of hydrologic zones in the region. To date there has been an investment of approximately $560,000 of FRBC funding.	28	$86,410	5+	L	45

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Water Quality and Quantity (cont.)	Monitoring Water Quantity and Quality of Forest Harvesting	Deception Creek has only had limited harvesting to date in the lower reaches. There is a considerable amount of logging planned once salvage work in 100 Mile Forest District is completed. A monitoring station now would permit the collection of two or three years of baseline data before the new blocks are harvested. The project outlines the collection of data on water quality and quantity in the Deception Creek watershed.	**New Water Monitoring Station on Deception Creek** Work with MELP to investigate cost-effective water monitoring options and establish a water monitoring station on Deception Creek. Exact details still to be determined. Examine cost-effective options before selecting equipment.	25	$30,000	4	L	48
		Monitor harvesting impact on the Penfold Creek drainage.	**Penfold Creek Water Quality Monitoring** Monitoring of seasonal flow rates of Penfold Creek and selected tributary drainages, along with the sedimentation (type and amount) occurring in these drainages which have been subject to harvesting activities.	27	$60,000	3	L	50
Timber Supply Review—New Models	Riparian Management Zones	Lack of adequate classification of streams, wetlands and lakes and the lack of an adequate forest inventory can result in an over- or under-estimation of the reserve zones (constrained area) associated with streams, wetlands and lakes, and limit a planner's ability to maximize overlaps with other non-timber resource values, such as OGMAs.	**Sampling of Riparian Management Zones (Surrogate or Actual) to Refine SRP Modelling Inputs** Develop, test and implement a sampling process for inventory of forest attributes in riparian management zones, both surrogate and actual, to confirm or refine inputs to sub-regional planning and landscape unit plans. Significant analytical overlaps of non-timber values are assumed to occur in modeled riparian management zones across the region. However, experience has shown that significant refinement of the overlap modeling assumptions is necessary, especially in the plateau areas of the region.	21	$50,000	>6	H	14
Timber Supply Review—Current Management Practices	Inventory Volumes	Recent forest audit results show that the inventories in the Cariboo Forest Region of the 1970's and portions of the 1990's overestimated volume. The inventory requires an adjustment through the Vegetation Resource Inventory (VRI) process.	**Vegetation Resources Inventory—Williams Lake TSA** Establish 5 plots for the next yeas for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.	33B	$75,000	1	H	17
			Vegetation Resources Inventory—Quesnel TSA Establish 100 plots for the next three years for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.	33A	$150,000	3	H	30
			Vegetation Resources Inventory—100 Mile House TSA Establish 100 plots for the next three years for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.	33C	$150,000	3	H	21
			Vegetation Resources Inventory —TFL 5 The critical elements are the maintenance of Allowable Annual Cut (AAC) and to provide management of non-timber resources on TFL 5. A VRI sampling project will be conducted on TFL 5.	34	$75,000	1	H	31

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
Timber Supply Review—Current Management Practices (cont.)	Tree Volumes	Tree volume for the forest inventory is estimated by using a regional taper equation for gross volume. It is believed that the regional taper equation does not reflect the existing stand conditions from which volume estimates in TSR are derived and projected in the Cariboo Region.	**Taper Equations** Sampling for validation and/or adjustment of taper equations.	50	$20,000	1	M	25
	Regenerated Stand Yield Tables for TSR	The TIPSY stand growth model uses Operational Adjustment Factor (OAFs) to adjust for losses to site occupancy and other factors to generate a volume estimate for each growth type. This is used in the TSR/TFL processes to determine future timber supplies. TSR2 used OAF 1 values of 12 – 15% and an OAF2 value of 5%. The TIPSY model assumes fully stocked stands. OAF 1 is used to adjust the model for less than full stocking, i.e. gaps and voids in stocking due to unmapped non-productive areas within a block. OAF2 adjusts the TIPSY model for losses due to disease over time. OAF2 starts at zero for young stands, gradually increasing up to 5% by 100 years (stand age).	**OAF Surveys** OAF surveys in all three TSAs to be done using approved OAF methodology as approved by Victoria. Individual projects will be identified in multi-year agreement holders' workplans.	43	$80,000	1	M	11
	Silvicultural Systems	Beginning in 1995, an innovative operational trial was initiated at the request of the District Managers in the Williams Lake, Horsefly and 100 Mile Forest Districts to find cost-efficient and effective methods for the rehabilitation of backlog landings. The reason for initiating a study at that time was that several larger licensees, including Lignum Ltd. and Weldwood of Canada Ltd., had expressed interest in large-scale rehabilitation of backlog and current landings. The trial was established with FRBC funding and with cooperation between the proponents – Lignum Ltd. and BC Ministry of Forests Research section in the Cariboo Forest Region. Inland Timber was the contractor that supervised the installation of the trial and performed the initial monitoring. Over 600 landings were treated using a large variety of site preparation, amelioration and planting treatments. Following treatment, the FRBC licensee proponent, Lignum Ltd., was committed to monitoring for two seasons, and thereafter, the MOF regional Research section assumed responsibility for the long-term monitoring of the trial. It is important that the monitoring continues so that the knowledge base in reclamation is expanded and that the value of foundation work done on the project is not lost.	**Landing Monitoring** From 1995 to 1999 in the Horsefly, 100 Mile House and Williams Lake Forest Districts, 645 landings had various treatments of site preparation, amelioration and planting. This project was set as a multi-year project and monitoring is an essential component of the project. Specifically, the landing reclamation trial was established to determine suitable treatment regimes and how to deal with cattle interactions. The monitoring methodology was previous established in the trial and will be continued over the life of the trial.	40	$35,000	2	M	40

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
Timber Supply Review—Current Management Practices (cont.)	Terrain Stability Mapping	As described in *Dictionary of Natural Resources Management* by Julian and Katherine Dunster (1996), Sustainable Forest Management (SFM) is "the management practice that maintain the productive and renewal capacities, as well as the genetic, species and ecological diversity of forest ecosystem." SFM requires sustainable forest development which implies, as stated in the above reference, "maintaining, without unacceptable impairment, the productive and renewal capacities" of the landbase. To maintain productivity and renewal capabilities of natural resources such as forestry, agriculture, wildlife, recreation and water production, the productivity and extent of the landbase must be maintained. To conserve the landbase, resource development activities such as logging (road building, landings, etc.) as well as silviculture activities, should be conducted in such a way that they do not cause landslide or mass wasting and/or soil erosion. Some types of terrain are more susceptible to damage by these activities than others. Terrain and terrain stability classification maps (TSM) identify the susceptibility of sites in the landbase to mass wasting and erosion. These are used to assist the managers or planners, and the field personnel, to determine site susceptibility for different types of machinery, logging methods, and where to best locate access roads.	**Reconnaissance Terrain Stability Mapping** Completion of Level D reconnaissance TSM mapping for the Cariboo Forest Region.	44	$133,800	3	M	23
	Silvicultural Systems	Between 1980 and 1990, it became obvious that plantation success in Douglas-fir was difficult to achieve in the SBSdw1 and SBSdw2 subzones. These subzones are characterized by dry, warm conditions, with frequent growing-season frost in a variety of locations across the landscape. The hot and dry conditions, coupled with frequent radiation frosts (and possibly combined with stock problems), made artificial regeneration of Douglas-fir very difficult. It seems that given appropriate conditions, natural regeneration will occur under the shelter of a residual canopy of trees. This uniform shelterwood trial was established in 1990 primarily to obtain Douglas-fir regeneration. Establishment and growth of natural regeneration depends on quantity and quality of seed, appropriate seed bed, adequate moisture and light, predation rates of seed, and vegetation competition. This research project has looked at each of these aspects over the years.	**Uniform Shelterwood Systems for Even-Aged Douglas-fir/Lodgepole Pine Stands in the SBSdw1 Subzone** The main goal for the project this year was to publish the natural regeneration, seed fall, seed predation, micro-climate and seedbed data in a MOF Working Paper. This has been done. An Extension Note that summarizes all results up to 1998 was finalized for publication in April and has been posted on the Ministry of Forests Research website. The project is entering the next active phase in 2000/2001. The second cut (regeneration cut) in the 70% residual basal area (RBA) treatments and buffers will start in January 2001. The goal is to reduce the RBA from 70% to 35% (20m²) in order to stimulate the establishment and growth of natural regeneration while retaining frost protection. The co-operators (Weldwood, UBC, and MOF Research section and Districts) have been meeting to prepare for this next phase of the project. Pre-treatment data on vegetation and natural and planted regeneration will be collected by students in the summer of 2000.	1	$56,000		M	39

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
Timber Supply Review—Current Management Practices (cont.)	TSR Netdowns	TSR reduces the productive forest land base using nominal road widths based on current standards. These widths need confirmation. Ingress is currently assumed not to occur on any road class, from on-block to main roads. Ingress on secondary and operational roads has the potential to mitigate the losses.	**Roads and Landings Area for TSR Netdown** Project will identify road classifications (mainline, operational and block roads) and will delineate landing areas. This classification will then allow for an appropriate road width to be applied. From this road buffer, an area can be determined for TSR netdown purposes.	36	$20,000	1	M	40
			Road Width and Road Ingress Surveys TSR reduces the productive forest land base using nominal road widths based on current standards. These widths need confirmation. Ingress is currently assumed not to occur on any road class, from on-block to main roads. Ingress on secondary and operational roads has the potential to mitigate the losses.	37	$25,000	1	L	42
	Douglas-fir Bark Beetle	Considerable effort has been put into Douglas-fir bark beetle (FBB) management in the Cariboo Forest Region over the past decade. An analysis of past and current FBB activity in the Military Reserve and the surrounding area is needed along with an investigation of the affects of intensive FBB management practices. The impacts of this salvage harvesting have not been measured with respect to remaining forest structure and wildlife attributes, and with regards to forest health and biodiversity, the issue of unknown effects is significant.	**Impact Assessment of Fir Bark Beetle Management on Forest Structure in the IDF Zone in the Military Reserve (Control) and Surrounding Area, Cariboo Forest Region** The overall study area (IDF zone west of the Fraser River) will be split into two separate areas: the Military Reserve or control, and the outer area or experiment. Both areas will be laid out in a grid pattern and sampled via cruise plots. Information on forest structure, wildlife attributes, FBB activity, etc. will be collected, analyzed and mapped.	47	$50,000	1	M	43
	Root Rots	Root rots are a significant forest management issue in the Cariboo Region. They occur in all TSAs at various levels. Estimates of volume losses on an annual basis are significant, yet have not been mapped. Actual losses by TSA are unknown. TSR assumes root rot losses are included in the VDYP growth model at endemic levels. VDYP plots were established 25 to 35 years ago and do not reflect current conditions.	**Root Rot Predictor Model Assessment** A predictive model is needed to enable mapping of high probability areas for root rot and to allow for greater accuracy in estimating the effect of root rots. A review of root rot models that could be applied to the Cariboo Forest Region is required. Models that may be applicable have to be tested prior to application. Proprietary models may have to be purchased. A report and recommendation on the models tested will be completed.	48	$20,000	1	M	53
	Wildcraft	This newly recognized resource sector involves the commercial harvest of various naturally occurring products, including wild mushrooms, berries and other materials. The development of targets for this sector is considerably constrained by the lack of resource inventory and utilization data. A target for this sector is to maintain the existing resource and enhance the existing level of use. Another important target is to maintain key pine mushroom harvesting sites in a condition that promotes mushroom growth.	**Wildcraft Inventory** Inventory of current wildcraft activities and known associated management issues. Information is currently lacking or unavailable on the extent of current and potential wildcraft resource use, making credible input to sub-regional and landscape unit planning very difficult. The CCLUP instructs that a solid database of the wildcraft resource should be established and is necessary to ensure effective implementation of the wildcraft targets. This project will allow the scoping of a process to collect inventory information on the wildcraft resource.	30	$10,000	1	M	52

Issue	Sub-Issue	Description of Sub-Issue	Project Title and Description	SSFM Project #	Funding Required for 2001/02	Length of Project (years)	Senior Manager Issue Priority	SSFM Planning Team Ranking
	Wildcraft (cont.)	The strategies for the wildcraft sector focus on: • Greatly improving the resource information base for this industry. • Addressing the need for tenure for wildcraft harvesters. • Ensuring that the subsequent planning processes address wildcraft interests. • Ensuring that known wildcraft values are incorporated into forest management activities.						
TSR Site Index Impacts	Growth and Yield	Growth and Yield Permanent Samples Plots (PSPs) in natural stands are used to validate and adjust the Variable Density Yield Prediction model. The VDYP is used in TSR to grow stands through time and predict volume yield through time.	**Growth and Yield PSP Maintenance** Growth and yield samples in natural stands have been established throughout the province since the early 1970's. Maintenance activities are carried out on a regularly scheduled basis. In order to ensure the retention of the investment in establishments, maintenance activities must be carried out as scheduled. As the age of the samples increases, the value of the investment in permanent sample plots also increases, as does the risk of loss. Approximately 75 PSPs will require maintenance each year for the foreseeable future.	41	$15,000	5	M	18
			Growth and Yield PSP Remeasurement Growth and yield samples in natural stands have been established throughout the province since the early 1970's. Re-measurements are scheduled on a ten-year basis. The re-measurement data are used to calibrate the variable density yield program (VDYP) model. In order to ensure the retention of the investment in establishments, re-measurements must be carried out as scheduled. As the frequency of re-measurement increases, the value of the investment in PSPs also increases. 67 PSPs throughout the Cariboo Forest Region are scheduled for remeasurement in 2001.	42	$100,000	5	M	29

8.4 Regional Summary of Recommendations

8.4.1 *Project Summary Table*

The project summary table is provided in Table 3 and a concise summary of projects recommended for funding listed in Table 3(a).

Table 3. SSFM project summary table

Key

Project Status	E=Existing, N=New
Knowledge Investment	E=Organization, synthesis, analysis of existing info; U=Tools, Applications, Extension; N=Field Inventory or Research
Type of Benefit	Reduction of risk to: E=Environmental values, T=Timber resource benefits, NT=Non-Timber benefits,
Scope	# Mus (Mgmt. Units), R=Region, P=Province
Timing	S=Short term (<5 yrs), L=Long term
Probability of Success	H=proven techniques, L=unproven technique or methodology
Funding Sources	RIP=Regional Investment Plan, RE=Research program, HIP=FRBC Headquarters Investment Plan, CLUPE=

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
CCLUP Wildlife and Fisheries	49	Reconnaissance 1:20,000 Fish Inventory	1	E	N	E, T, NT	R	L	CCLUP, TSR	Ongoing	H	RIP	8,000,000	6		$1,500,000	$1,500,000	$1,500,000	$1,500,000	$22,000,000	21	$500,000
CCLUP Tool Development	32	Terrestrial Resource Inventory Mapping (TRIM II)	2	E	U	E, T, NT	R	S	CCLUP, TSR3, Regional	3 years	H	RIP	170,000	2	$500,000	$500,000	$500,000	$500,000		$2,170,000	5	$500,000
Mule Deer	10	MDWR Management Plans	3	E	N	E, T	R	L	CCLUP, TSR	2005	H	RIP		5		$180,000	$180,000	$180,000	$180,000	TBA	TBA	$180,000
CCLUP Biodiversity Targets	7	Old and Mature Definitions	4	E	N	E, T	R	S	CCLUP, TSR	2005	L	RIP	50,000	1		$50,000	$50,000	$50,000	$50,000	$250,000	5	$50,000
Current Management Practices	50	Taper Equations	5	N	E, N	T	R	L	TSR	2002	H	RIP				$20,000				$20,000	1	$0
Caribou	12A	Mt. Tom Adaptive Management	6	E	N	E, T	R	S, L	CCLUP	Ongoing	H	RE, RIP	54,000	2		$50,000	$50,000	$50,000	$50,000	$254,000	5+	$50,000
Caribou	12B	Satah-Chezacut Adaptive Management	7	E	N	E,T	R	S,L	CCLUP	Ongoing	H	RE, RIP	10,000	3		$26,400	$26,400	$26,400	$26,400	$105,560	5+	$26,400
Mule Deer	9	Silv. Systems for Fdi at Viewland Mtn.	8	E	N	E,T	R	S, L	CCLUP	Ongoing	H	RE	80,000		$15,000	$5,000	$36,000	$22,000	$37,000	$199,000		$5,500
Fisheries and Riparian	22	Digital Roll-up Fish Inventory	9	E	E, U	E, T, NT	R	L	CCLUP, TSR	Ongoing	H	RIP	25,000	1		$40,000	$30,000	$20,000		$105,000	4	$40,000

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required						Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
Enhance-ment Strategies	39	TESC	10	N	E, U	T, NT, E	R	S	TSR3, CCLUP, SLUP, LUP	2-5 years	H	RIP	0	0		$500,000	$500,000			$1,000,000	3	$500,000
Current Management Practices	43	OAF for TIPSY	11	N	N	T	R	S	TSR3	1	H	RIP	70,000	1	$70,000	$80,000				$150,000		$80,000
CCLUP Biodiversity Targets	4	Inventory of R - and B -Listed Species, etc	12	N	N	E, T, NT	R	S, L	CCLUP, IWMS	2005	H	RIP	app. 190,000	2		$150,000	$200,000	$200,000	$200,000	$940,000	7	$150,000
Other Species	15	Grizzly Bear	13	N	N	E, T	R	S	CCLUP	2005	H	RIP	50,000	1		$100,000	$300,000	$300,000	$300,000	$1,050,000	6	$100,000
Fisheries and Riparian	21	Riparian Buffer Sampling	14	N	N	N, T, E	R	S, L	TSR3, CCLUP, SLUP, LUP	1	H	RIP		1		$50,000				$50,000	1	$50,000
Fisheries and Riparian	24A	Lakes Inventory	15	E	N	E, T, NT	R, P	L	CCLUP, TSR, Lakes class'n	Ongoing	H	RIP	1,200,000	6		200000'	$200,000	$200,000	$200,000	$2,000,000	20	$0
Fisheries and Riparian	24B	Winter Limnologies	16	E	E	E, T, NT	R	L	CCLUP, TSR, Lakes class'n	March 31, Ongoing	H	RIP	130,000	15		$15,000	$15,000	$15,000	$10,000	$200,000	20	$0
Current Management Practices	33B	VRI - Williams Lake	17	E	N	T	R	S, L	TSR3, S	2	H	RIP	375,000	4		$75,000				$450,000	4	$140,000
Site Index Impacts	41	G&Y Maintenance	18	E	N	T	R	S, L	S	4+	H	RIP	15,000	1		$15,000	$15,000	$15,000	$15,000	$60,000	5+	$15,000
CCLUP Biodiversity Targets	5	Seral Targets	19	N	E	E,T	R	L	CCLUP, TSR	2002	H	RIP	0	0		$15,000	$0	$0	$0	$15,000	1	$15,000
Fisheries and Riparian	26	Horsefly River Sediment Monitoring	20	E	N	NT	R	S, L	CCLUP	Ongoing	H	RIP	111,280	7		$12,000	$12,000	$12,000	$12,000	$48,000	10	$0
Current Management Practices	33C	VRI - 100 Mile TSA	21	N	N	T	R	S, L	TSR3, S	2	H	RIP	0	0		$150,000	$150,000	$150,000		$450,000	3	$150,000
Current Management Practices	40	Landing Monitoring	22	E	N	E, T, NT	R, P	S, L	TSR2	2002 and ongoing	H	RE, CLUPE, RIP	200,000	4		$40,000	$30,000	$40,000		$310,000	7+	$35,000
Current Management Practices	44	Terrain Stability Mapping	23	N	E	E, T	R	L	CCLUP, TSR	2003	H	RIP	2,500,000	5		$133,807	$133,807			$2,767,614	2	$83,807
Mule Deer	11	Mule Deer in Wetbelt	24	N	U, N	E, NT	R	S, L	CCLUP	2002	H	RIP	0	0		$20,000				$20,000	1	$20,000
Caribou	13	Caribou Strategy	25	E	N	E, T	R	S	CCLUP	2005	H	RIP		5		$310,000	$310,000	$190,000	$130,000	$940,000		$310,000
CCLUP Biodiversity Targets	3	CCLUP Biodiversity Strategy: Patch Size Analysis	26	E	U	T, NT	R	S	TSR, CCLUP	2001	H	RIP				$50,000				$50,000	1	$50,000
CCLUP Biodiversity Targets	8	Seral Contribution of MPB and PFTs	27	N	U,N	T,NT	R	S	TSR3, CCLUP, SLUP, LUP	2001	H	RIP	50,000		$50,000	25,000				25000	1	$25,000

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
CCLUP Wildlife	45	Terrestrial Ecosystem Mapping	28	N	E	E,T	R	S	CCLUP, TSR	1 year	H	RIP	0	0		$70,000	$0	$0	$0	$70,000	1	$70,000
Site Index Impacts	42	G&Y Re-Measurements	29	E	N	T	R	S, L	TSR3	4+	H	RIP	195,000	1		$100,000	$120,000	$75,000	$80,000	$375,000	5+	$100,000
Current Management Practices	33A	VRI - Quesnel TSA	30	N	N	T	R	S, L	TSR3, S	2	H	RIP	0	0		$150,000	$150,000	$150,000		$450,000	3	$0
Current Management Practices	34	VRI - TFL 5	31	N	U	T, NT	TFL 5	L	TSR, MP	2001	H	RIP	0	0		$75,000				$75,000	1	$75,000
Tool Development	38	Resource Information Management Framework	32	N	U	T, NT	R,P	L	CCLUP, TSR	2003	H	RIP				$95,000	$95,000	$95,000		$285,000	3	$95,000
Other Species	16	Mountain Goat	33	N	N	E	R	S	CCLUP	2005	H	RIP	0	0		$110,000	$60,000	$40,000	$40,000	$250,000	4	$110,000
CCLUP Biodiversity Targets	6	Demo Site for OG Attributes	34	E	U	E	R	S, L	CCLUP	2001/02	H	RIP	3,000	1		$15,000				$18,000	2	$15,000
Other Species	14	Furbearer Inventory	35	E	N	E, T	R	L	CCLUP	2004	L	RIP	170,000	2		$70,000	$70,000	$70,000		$380,000	5	$100,000
Other Species	17	Moose	36	E	N	E, T	S	S	CCLUP	2003	H	RIP				$160,000	$160,000			TBA	TBA	$60,000
Mountain Pine Beetle	46	MPB Workshop	37	N	N	T,NT	R	S,L	CCLUP, TSR	2001	H	RIP				$50,000				$50,000		$0
Other Species	18	Riske Creek Birds	38	N	N	NT	R	L	CCLUP	2003	H	RIP.RE	0		$5,000	$5,000	$5,000			$15,000		$5,000
CCLUP Biodiversity Targets	1	Uniform shelterwood	39	E	N	E, T	R	S, L	CCLUP, TSR	10	H	RIP,RE	73,500		$12,000	$56,000	$40,000	$40,000	$40,000	$261,500		$56,000
Current Management Practices	36	Roads and Landings Area for TSR Netdowns	40	E	U	T	IFPA	L	TSR 2	2001	H	RIP		2	$0	$0					3	$20,000
CCLUP Biodiversity Targets	2	CWD Retention and Recruitment	41	N	N	T, NT	R	S	TSR, CCLUP	2001	H	FRBC	0	0		$30,000				$30,000	1	$30,000
Current Management Practices	47	FBB on Military Reserve	43	N	N	E, T	IDF, R	S	TSR, FPC	2002	H	RIP	0	0		$50,000				$50,000	1	$0
Visual	31	Visual Targets	44	N	N	N,T,E	R	S,L	S	1	H	RIP		1		$50,000				$50,000	1	$0

Issue	Project				Knowledge Investment	Benefits			Ability to Use Knowledge	Timing	Probability of Success	Potential $ Source	Investment to Date			$ Required					Total Years to Complete	Recommended Funding
	#	Name	Rank	Status		Type	Scope	Timing					$	Years	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total		
Fisheries and Riparian	28	Automated Water Monitoring Network	45	E	N, U	E, NT	R	S, L	CCLUP, TSR, TFL Mgmt. Plans, Watershed Assessments	Where necessary, stations can be ongoing if operational funding available	H	RIP, RE?, HIP?	559,760 (Includes $200,000 for Needs/Gap Analysis in 1998)	2		$78,760	$78,760	$78,760	51, 880	$847,920	7	$86,410
Fisheries and Riparian	29	Stream Shade	46	N	N	NT	R	S	TSR	5 year	H	RIP	0	5 years required		$19,000	$19,000	$19,000	$19,000	$76,000	5	$19,000
Fisheries and Riparian	23B	Bull Trout Inventory	47	N	N	E, T, NT	R	L	CCLUP, TSR	April/01 to March/04	H	RIP				$150,000	$150,000	$150,000		$450,000	3	$0
Fisheries and Riparian	25	New Water Monitoring Station on Deception Creek	48	N	N	E, t, NT	R	L	CCLUP, TSR	2001	H	RIP				$30,000	$10,000	$10,000	$10,000	$60,000	20	$0
Fisheries and Riparian	23A	Kokanee Inventory	49	N	N	E, T, NT	R	L	CCLUP, TSR	April/01 to March/03	H	RIP	50,000	2		$150,000	$150,000	$150,000	$150,000	$650,000	10	$0
Fisheries and Riparian	27	Penfold Creek Monitoring	50	E	N	NT	P	L	CCLUP	2005	H	RIP	50,000			$90,000	$60,000	$50,000		$250,000		$60,000
Fisheries and Riparian	24C	Lakes Classification	51	E	E	E, T, NT	R	L	CCLUP, TSR, Lakes class'n	Ongoing	H	RIP	100,000	5		$50,000	$50,000	$50,000	$50,000	$30,000	10	$50,000
Wildcraft Targets	30	Wildcraft	52	N	E, U, N	NT	R	S	CCLUP	3 years	H	RIP	0	0		$10,000	$25,000	$25,000		$60,000	3	$0
Current Management Practices	48	Root Rot Predictor	53	N	N, U, E	T	R	S	TSR	2001	H	RIP				$20,000				$20,000	1	$0
Current Management Practices	51	Deciduous growth/ grazing	NR	E	N, E	T, NT	R	S, L	TSR	2001	H	RIP	20,000	1		$20,000				$40,000	1	$20,000

$4,047,117

Table 3(a). Condensed SSFM project summary table

Project Number	Project Name	Recommended Funding
1	Uniform shelterwood systems for Fdi/Pl in SBSdw1	$56,000
2	CWD Retention and Recruitment	$30,000
3	CCLUP Biodiversity Strategy: Patch Size Analysis	$50,000
4	Inventory of: Red- and Blue-Listed Species and their Habitats, Rare Plants and Rare Ecosystems	$150,000
5	Mature plus Old and Old Seral Targets	$15,000
6	Demonstration Site for Old Growth Attributes	$15,000
7	Old and Mature Forest Attribute Definitions	$50,000
8	Seral Contribution of MPB and PFTs	$25,000
9	Silvicultural Systems for Fdi with very deep snowfall at Viewland Mtn.	$5,500
10	MDWR Management Plans	$180,000
11	Mule Deer and Silvicultural Systems on Wetbelt Winter Ranges	$20,000
12A	Mt. Tom Adaptive Management Trials	$50,000
12B	Satah-Chezacut Adaptive Management	$26,400
13	CCLUP Caribou Strategy	$310,000
14	Furbearer Inventory	$100,000
15	Grizzly Bear Population and Habitat Inventory	$100,000
16	Mountain Goat Habitat and Animal Inventory	$110,000
17	Moose Strategy	$60,000
18	Riske Creek Waterfowl Habitat Study	$5,000
21	Riparian Buffer Sampling	$50,000
22	Digital Roll-up Fish Inventory	$40,000
23A	Kokanee Inventory	$0
23B	Bull Trout Inventory	$0
24A	Lakes Inventory	$0
24B	Winter Limnologies	$0
24C	Lakes Classification	$50,000
25	New Water Monitoring Station on Deception Creek	$0
26	Horsefly River Sediment Monitoring	$0
27	Penfold Creek Monitoring	$60,000
28	Automated Water Monitoring Network	$86,410
29	Predictive Model for Stream Shade	$19,000
30	Wildcraft/Agro-Forestry Targets	$0
31	CCLUP Visual Targets	$0
32	Terrestrial Resource Inventory Mapping (TRIM II)	$500,000
33A	VRI - Quesnel TSA (Phase II)	$0
33B	VRI - Williams Lake (Phase II)	$140,000
33C	VRI - 100 Mile TSA (Phase II)	$150,000
34	VRI - TFL 5	$75,000
36	Area of Roads and Landings for TSR Netdowns	$20,000
38	Resource Information Management Framework	$95,000
39	TESC (Timber Enhancement Strategy Committee)	$500,000
40	Monitoring of Rehabilitated Landings	$35,000
41	G&Y PSP Maintenance	$15,000
42	G&Y PSP Re-Measurements	$100,000
43	OAF Study for TIPSY	$80,000
44	Terrain Stability Mapping	$83,807
45	Terrestrial Ecosystem Mapping	$70,000
46	MPB Workshop	$0
Project Number	**Project Name**	**Recommended Funding**
47	FBB on Military Reserve and Surrounding Area	$0
48	Root Rot Predictor Model	$0

49	Reconnaissance 1:20,000 Fish and Fish Habitat Inventory	$500,000
50	Taper Equations	$0
51	Deciduous growth/ grazing	$20,000
	Total	**$4,047,117**

8.5 Research Priorities

Research priorities for regional SSFM funding were established at a workshop in Williams Lake on June 29. The five top priorities are:

1. What are the dynamics and ecosystem effects of natural disturbance regimes/processes and how do we emulate the full range of natural disturbances at the stand and landscape levels?
   This includes two dimensions:
   - Ecosystem function – Maintaining biological legacies is an important aspect of ecosystem function.
   - Management – How can we use our knowledge of disturbance agents to more pre-emptively design management systems at the stand and landscape levels?

2. Are we successfully meeting the habitat requirements of key species (eg. CCLUP, Identified Wildlife Management Strategy[IWMS]) and integrating with other species at the landscape and stand levels?

3. Do Forest Practices Code guidelines, individually and collectively, give us what we need to maintain biodiversity at the landscape and stand levels? E.g.
   - Biodiversity guidebook
   - Riparian
   - Landscape unit planning guide
   - IWMS

4. What alternative silvicultural systems are appropriate to meet various integrated management objectives (eg. long-term site productivity, biodiversity)?

5. What are the key attributes needed to maintain ecosystem function for each ecosystem . . e.g.
   - Coarse woody debris
   - Snags
   - Big trees
   - Old growth
   - Understory species
   - Species mix

   …and how do we create and maintain attributes through management practices at both the landscape and stand levels?

8.6 Provincial Priorities

None of the SSFM projects proposed for 2001/2002 address provincial priorities, as all are regionally based.

8.7 Transition Projects

None of the SSFM projects proposed for 2001/2002 are transition projects.

Appendix A. Contact And Support Personnel

Participants in the SSFM process to produce the 2001/2002 RMP were:

Senior Managers Group

Name	Affiliation
Brian Smith, chair	MOF, Cariboo region
Ray Leduc	MOF, Cariboo region
Rodger Stewart	MELP, Cariboo region
Stan Gripich	FRBC
Glenys Rutledge	MOF, Quesnel district
Frank Miklas	MOF, Horsefly district
Al Hicks	Weldwood, 100 Mile House
Ian Hamilton and Mark Hopkins	Ainsworth, 100 Mile
Charles von Hahn	Slocan Forest Products, Quesnel
Al Hunter	West Fraser, Quesnel
Karen Campbell	Weldwood, 100 Mile House
Guenter Weckerle	West Fraser, Williams Lake
Dave Conly	Lignum
Rick Wheeler	Riverside Forest Products
Ray Zimmerman	CLMA
Jane Perry	RMP Coordinator

SSFM Planning Team

Management Unit	Name	Affiliation
Cariboo region	Ray Leduc, chair	MOF
	Chris Swan and Troy Larden	MELP
	Harry Jennings	MOF
	Eric Johanson	MOF
	Ken Soneff	MOF
	Ken Vanderburgh	IAMC
	Jane Perry	RMP coordinator
Quesnel TSA	Lyle Badger	MOF
	Al Hunter	West Fraser
	Gerry Powell	Weldwood
Williams Lake TSA	Marian Diamond	MOF
	Tracy Earle	Lignum
	Rick Wheeler	Riverside
	Guy Burdikin	West Fraser
100 Mile TSA	Val Duffin	Weldwood
	Ian Hamilton	Ainsworth

Appendix B. Supporting References

B.1 Publications

Province of British Columbia. 1995. The Cariboo-Chilcotin land use plan. Victoria, BC.

B.2 SSFM Project Descriptions

Number	**SSFM-01**
Title	**Uniform Shelterwood Systems for Even-Aged Douglas-fir/Lodgepole Pine Stands in the SBSdw1 Subzone**
Proponent	**Ken Soneff, MOF Research**

Description of Issue

A. Overview
Between 1980 and 1990, it became obvious that plantation success in Douglas-fir was difficult to achieve in the SBSdw1 and SBSdw2 subzones. These subzones are characterized by dry, warm conditions, with frequent growing-season frost in a variety of locations across the landscape. The hot and dry conditions, coupled with frequent radiation frosts (and possibly combined with stock problems), made artificial regeneration of Douglas-fir very difficult. It seems that given appropriate conditions, natural regeneration will occur under the shelter of a residual canopy of trees.

B. Use of New Knowledge
The SBSdw subzones in the Cariboo Region are found in the Williams Lake, 100 Mile House, Quesnel and Horsefly Forest Districts, and contribute a significant proportion of the AAC for the region. Maintenance of Douglas-fir–leading stands across the landscape will be important for certification, as well as TSR.

C. Relationship to Sustainable Forest Management
The sites are productive in terms of timber and range resources, as well as having high value in recreation, wildlife, water supply and aesthetics. The use of all of these resources places a heavy demand on the land base.

D. Use of Improved Knowledge
Regeneration of stands to Douglas-fir will maintain biodiversity, mitigate pest problems and maintain a component of Douglas-fir in the long-term timber supply.

E. Challenges and Constraints
Resistance to adopting the alternative silvicultural system due to increased cost and effort.

Knowledge Gaps

F. Existing Information
None.

G. Knowledge Gap
Information is needed to develop an ecologically appropriate silvicultural system to regenerate Douglas-fir in the SBS.

Proposed Project

H. Project Description
This uniform shelterwood trial was established in 1990 primarily to obtain Douglas-fir regeneration. Establishment and growth of natural regeneration depends on quantity and quality of seed, appropriate seed bed, adequate moisture and light, predation rates of seed, and vegetation competition. This research project has looked at each of these aspects over the years.

The main goal for the project this year was to publish the natural regeneration, seed fall, seed predation, microclimate and seedbed data in a MOF Working Paper. This has been done. An Extension Note that summarizes all results up to 1998 was finalized for publication in April and has been posted on the Ministry of Forests Research website.

The project is entering the next active phase in 2000/2001. The second cut (regeneration cut) in the 70% residual basal area (RBA) treatments and buffers will start in January 2001. The goal is to reduce the RBA from 70% to 35% (20m²) in order to stimulate the establishment and growth of natural regeneration while retaining frost protection. The co-operators (Weldwood, UBC, and MOF Research section and Districts) have been meeting to prepare for this next phase of the project. Pre-treatment data on vegetation and natural and planted regeneration will be collected by students in the summer of 2000.

I. Function

Results so far indicate that regeneration of Douglas-fir is successful. There are still a few biological questions and management issues that need to be resolved and these will be the focus of the next phase of the trial. This project needs to be further developed through adaptive management to a larger operational scale.

J. Sustainable Forest Management

This research will also add to our understanding of Douglas-fir natural regeneration dynamics and to the environmental conditions required for re-establishing Douglas-fir on these sites after harvesting.

K. Location

There are three replicate study sites: Beedy Creek in the Williams Lake Forest District, and the Gavin Lake Road and UBC Research Forest sites in the Horsefly Forest District. All three sites are situated in the SBSdw biogeoclimatic subzone, in mature (80-120 year old) Douglas-fir and lodgepole pine mixed stands. The approximate size of each study area is 15 to 30 ha. This size is required to accommodate the five 1.4-ha treatment blocks and treated buffers.

L. Timeframe

The workplan for this project includes monitoring until the year 2015.

M. Benefits

The following are overall benefits that would result from adoption of the Uniform Shelterwood study in the SBS.

1. Successful regeneration of Douglas-fir.
2. Maintenance of Douglas-fir–leading stands across the landscape to maintain biodiversity and to mitigate pest problems.
3. Maintenance of a component of Douglas-fir in the long-term timber supply.
4. Enable proactive management by beetle proofing and lessening windthrow.
5. Capture more volume from the stands by harvesting early mortality and increase the value of the residual stand by increasing piece size.
6. Access timber earlier than the rotational age (120 years) through prepatory cut (commercial thin) and possibly the seed cut.
7. Increased access to timber because green-up rules will not apply.

N. Performance Indicators

Data collection by treatment plot to assess the following from 2000 to 2015:

1. Pre- and post-harvesting stand structure; i.e. the mature stand age, species distribution, total basal area and diameter distributions (7.5 cm minimum dbh; BAF4).
2. Pre- and post-harvesting vegetation assessments (Year 0, 1, 2, 3 and 5).
3. Pre- and post-harvesting natural regeneration (all stems under 7.5cm dbh; Year 0, 1, 3, 5).
4. Pre- and post-harvesting wind throw losses (annually).
5. Site preparation and underplanted stock experiments.
6. Micro-climate monitoring.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$73,500	$12,000	$56,000	$40,000	$40,000	$40,000	$261,500

Number	**SSFM-02**
Title	**Coarse Woody Debris Retention and Recruitment**
Proponent	**Gerry Powell, Weldwood, Quesnel**

Description of Issue

A. Overview
Determination of the amount of coarse woody debris (CWD) being retained on site after harvesting, and additional recruitment sources of CWD. The geographic scope for this project is the Quesnel TSA. Weldwood of Canada has operations in most of the biogeoclimatic zones present in the Quesnel TSA.

B. Use of New Knowledge
The information from this study has applications for TSR, under current management practices and CCLUP strategies. This knowledge may be used in the certification process that many licencees are currently pursuing.

C. Relationship to Sustainable Forest Management
There will remain an uncertainty of timber/non-timber issues if this issue isn't resolved.

D. Use of Improved Knowledge
Knowledge will improve on-site prescriptions and landscape planning by determining how much and what type of CWD is being left on site.

E. Challenges and Constraints
Being able to successfully prescribe CWD retention and determine how recruitment of new CWD will affect the prescription.

Knowledge Gaps

F. Existing Information
No known existing information for this issue.

G. Knowledge Gap
The issue of CWD retention and recruitment is a requirement under current operations. Planning for this requirement and the effect of our current operations is not well known. Any information on this issue will aid in closing the knowledge gaps.

Proposed Project

H. Project Description

I. Function
Better understanding of CWD retention and recruitment sources on a wide variety of sites.

J. Sustainable Forest Management
The results from this project should assist in the development of tools to model current management practices in TSR around the issue of CWD retention and recruitment. This may also be tied to unsalvageable losses, in the sense that some minor amounts of windthrow may be one recruitment avenue for CWD.

K. Location
The project will be completed throughout the Quesnel TSA. The results are expected to have broad results, since the same biogeoclimatic zones are found throughout the Cariboo region.

L. Timeframe

Will be completed during the 2001 field season.

M. Benefits

Will assist in providing direction to comply with government policy on CWD.

N. Performance Indicators

We currently have no targets for CWD, but this project is a first step in trying to set appropriate targets.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$0		$30,000				$30,000

Number	**SSFM-03**
Title	**CCLUP Biodiversity Strategy: Patch Size Analysis**
Proponent	**Gerry Powell, Tolko, Quesnel**

Description of Issue

A. Overview
CCLUP and the Regional Biodiversity Strategy have identified the need for spatial-based planning to achieve biodiversity targets. This includes the analysis of the size, location and timing of forested patches and openings.

B. Use of New Knowledge
The patch size distribution identified for biodiversity objectives will provide flexibility to short-term cutblock planning. It is expected that this flexibility will be greater than the routine standards available under the Forest Practices Code.

C. Relationship to Sustainable Forest Management
The size, location and timing of forested patches and openings can have significant implications for short-term timber availability and cutblock planning.

D. Use of Improved Knowledge
This information will be used for short-term timber availability and cutblock planning.

E. Challenges and Constraints
Require final landscape unit boundaries and up-to-date harvesting history.

Knowledge Gaps

F. Existing Information
Current harvesting history and proposed landscape units.

G. Knowledge Gap
Current distribution of patch sizes within BEC units on a landscape unit basis.

Proposed Project

H. Project Description
Analysis of BEC units in the Quesnel TSA within landscape units with greatest history of development, starting in the western portion of the TSA.

I. Function
This project will provide information for comparison to the size distribution identified for biodiversity. Assessment of short-term block planning opportunities can be developed.

J. Sustainable Forest Management
Will potentially provide greater flexibility to short-term cutblock planning than currently provided in the Forest Practices Code, and will provide for spatial-based planning to achieve biodiversity objectives.

K. Location
Quesnel TSA.

L. Timeframe

Completion of this project is 2001/02.

M. Benefits

The benefits of this project are:

- Flexibility to short-term cutblock planning.
- Provision of information required for spatial-based planning for achieving biodiversity targets.

N. Performance Indicators

Successful identification of current distribution of patch sizes on a defined landscape unit.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
?	?	$50,000				$50,000

Note: There is currently a project in the Chilcotin District with an estimated cost of $30,000. Tolko is prepared to commit $50,000 for the 2001/02 fiscal year.

Number	**SSFM-04**
Title	**Inventory of Red- and Blue-Listed Species and their Habitats, Rare Plants and Rare Ecosystems**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

CCLUP implementation requires inventories to identify species and habitats at risk and their management needs. Also, consistent with the CCLUP targets, there is a need to conduct site assessments in order to establish Wildlife Habitat Areas (WHAs) as required to protect these species and habitats.

This type of inventory can be conducted anywhere within the region (at the Landscape Unit scale). The highest densities of species and habitats at risk occur in the grasslands making these areas high priority to MELP. Conflicts may arise due to competing interests for the grassland habitats (i.e. red and blue species/habitats vs. range use vs. forest encroachment [burning]).

B. Use of New Knowledge

The new knowledge will be used to assess the status of red- and blue-listed species, rare plants and rare ecosystems and to determine where habitat protection needs to be considered. The habitat inventory information will be used to identify critical areas of red- and blue-listed species habitat for WHA designation.

C. Relationship to Sustainable Forest Management

It is critical that red- and blue-listed species and their habitats are sustained during timber harvest development of forestlands. It may be important to be able to document stable or recovered status of these populations in order to achieve forest company certification.

D. Use of Improved Knowledge

Population and habitat inventory may allow for implementation of specialized silvicultural prescriptions or forest planning that addresses maintenance of red- and blue-listed species values within important watersheds.

E. Challenges and Constraints

These species/plants/ecosystems are at risk, meaning that their numbers are potentially very low in a given area, they are too small or secretive to be noticed, and not much is known about their numbers, behaviors or habitat use. All of these factors make it difficult to conduct presence/non-presence or relative abundance inventory work on these species/habitats.

Knowledge Gaps

F. Existing Information

Two previous inventories of this nature have been conducted: one in the Taseko Management Zone (MELP) and one in the Moffat area (Weldwood, Williams Lake).

G. Knowledge Gap

The identification of important habitats required by red- and blue-listed species is necessary for stand level habitat protection under the Forest Practices Code either as WHAs or as part of the Higher Level Plan. Knowledge of the species status and habitat use is required to determine whether objectives are being met with the land use management strategies implemented through the CCLUP.

Proposed Project

H. Project Description

- Conduct inventories (presence vs. non-presence or relative abundance depending on the species) of wildlife species at risk and Identified Wildlife in the Cariboo Region to meet CCLUP and FPC obligations. Multiple species can be inventoried in the same area.
- Conduct detailed site assessments in order to determine WHA requirements for Identified Wildlife.

I. Function

In order to meet the CCLUP (p. 156 and 158) and FPC requirements, an inventory to identify species and habitats at risk is of high importance. Filling this knowledge gap will help in overall forest and land use planning because it will remove some of the uncertainty in planning development activities in different areas where species at risk issues are a concern.

J. Sustainable Forest Management

In order to meet CCLUP (p. 156 and 158) and FPC requirements, inventory of red- and blue-listed species and habitats is of high importance. Filling this knowledge gap will help in overall forest and land use planning because it will remove some of the uncertainty in planning forest development activities in important species-at-risk areas.

K. Location

Region wide.

L. Timeframe

There is such a large number of species and habitats to inventory that completion of all species at risk inventories cannot be done within a five-year period and some monitoring work will be required on an ongoing basis. Each project can be conducted over the course of one full year (for the field inventories so that every season is inventoried) plus a few months for final reports and maps (i.e. 1½ year in total). The cost of one of these projects really varies due to the number of species to search for, area access, etc.

M. Benefits

Implementation of the requirement for inventories of red and blue listed species and habitats as directed by CCLUP. Improved ability to incorporate red and blue listed species, plants and ecosystem measures into forest management.

N. Performance Indicators

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
~$190,000*	0	$150,000	$200,000	$200,000	$200,000	$750,000

* Includes two completed projects.

Number	**SSFM-05**
Title	**Temporal Achievement of Mature plus Old and Old Seral Targets**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

Seral targets for "mature plus old" and "old" forests are expected to be met under CCLUP. Natural disturbance factors such as mountain pine beetle, wind damage and fire are expected to erode the areas currently set aside. Maintenance of these seral targets therefore depends on recruitment into mature and old seral from younger age classes. In some landscape units, the disturbance history has resulted in an imbalanced age structure with some mature and old and large areas of early seral. Where existing mature plus old stands are lost to natural disturbance, there is little mid seral to recruit.

There is concern that seral targets for mature plus old and old cannot be achieved given the current age structure of the forests in each Landscape Unit (LU) by Natural Disturbance Type (NDT) across biogeoclimatic zones given the probability of attrition through natural disturbance. Spatial representation of biodiversity attributes cannot be measured at the TSA level (too broad) and should be measured at the Landscape Unit level (an ecological unit specified by the Biodiversity Guidebook).

B. Use of New Knowledge

This will demonstrate how seral representation will be met through time. This information can be used to show the status of implementation of biodiversity under CCLUP as well as investigate sustainable harvest and potential fall-down periods in the TSR process.

C. Relationship to Sustainable Forest Management

This is a fundamental question regarding sustainable forest management and the maintenance of biodiversity (seral condition) through time.

D. Use of Improved Knowledge

This knowledge could be used in operational planning and timber supply modeling.

E. Challenges and Constraints

The biggest challenge or constraint may be acquiring the most up-to-date databases in order to do the calculations.

Knowledge Gaps

F. Existing Information

The information should be available in the forest cover database (stand age needs to be projected from time of interpretation to current year) and licensee development plans (digital status unknown and may be at different stages between licensees and MOF offices).

G. Knowledge Gap

- Current age class distributed by NDT-BEC Landscape Unit.
- Rates and distribution of natural disturbance in the future.

Proposed Project

H. Project Description

For selected Landscape Units, compile and graph the age class information over time by LU, NDT and BEC zone.

I. Function

The results would show potential for recruitment into mature and old through time.

J. Sustainable Forest Management

This project will demonstrate whether current development patterns are sustainable in light of anticipated natural disturbance and their effect on seral representation.

K. Location

This project will be undertaken on selected landscape units in each forest district within the Cariboo Forest Region.

L. Timeframe

One year.

M. Benefits

Identify development patterns where rate and pattern of cut are creating an age class structure that greatly increases the risk to achievement of biodiversity through time.

N. Performance Indicators

Use of results in planning decisions.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$15,000	0	0	0	$15,000

Number **SSFM-06**
Title **Demonstration Site for Creation of Old Growth Attributes**
Proponent **Karen Campbell, Weldwood**

Description of Issue

A. Overview
Treatments to speed the recovery of old forest characteristics are not well developed. This project will demonstrate some of the techniques available to local forest managers for speeding recovery of some of the most important ecological attributes needed by wildlife. A site will be chosen within Weldwood's operating area in the Horsefly Forest District, but the techniques demonstrated will be applicable throughout the region.

B. Use of New Knowledge
The use of techniques to maintain or enhance old attributes within managed stands may help to maintain biodiversity targets within the CCLUP, which is a key part of forest certification as well. Installing this demonstration site may encourage forest managers within the region to use the techniques.

C. Relationship to Sustainable Forest Management
Approximately 75% of the forest land base is slated for harvest within the current rotation. Stands in the working forest will be grown to rotation age (80-120 years) and harvested again, leaving little old growth area. Standing dead trees and coarse woody debris are two essential features in old forests that may not be present in sufficient quantities within future managed forests due to current harvesting practices and regulations. Old forest will remain in designated reserves, but stand manipulations to enhance old characteristics within partially cut or second growth areas could increase the amount of "functionally old" forest habitat available, and thus increase biodiversity in future forests (relative to current practices).

Many rare animal species are dependent on old growth attributes for habitat. For example, fisher, wolverine, caribou, bats, goshawks, owls, woodpeckers, frogs, and salamanders all use some characteristics of old forest for habitat.

In landscape units with little option for harvest due to biodiversity constraints, timber could be made available as partial cutting, contingent on the use of these techniques to maintain old growth attributes.

D. Use of Improved Knowledge
Maintaining biodiversity is one of the key principles of sustainable forest management. The use of these techniques to maintain old attributes within managed stands, in addition to other initiatives under the Forest Practices Code and the CCLUP, should help to increase biodiversity in the future (relative to current practices).

E. Challenges and Constraints
Applying these techniques will be an additional cost to forest licensees.

Knowledge Gaps

F. Existing Information
Biodiversity maintenance has been considered in the Forest Practices Code and the CCLUP. Old Growth Management Areas, wildlife tree patches, wildlife trees, riparian reserves, coarse woody debris guidelines, the Identified Wildlife Management Strategy, the Biodiversity strategy, and the Caribou, Mule Deer, and Fisheries Strategies all contribute to maintaining biodiversity.

Techniques for creation of old growth attributes have been demonstrated in coastal riparian forests.

G. Knowledge Gap

In addition to the old and mature forests left intact for biodiversity maintenance, there is also the option to modify the structure within partially cut or older logged areas to hasten the return of old attributes to the stand. A demonstration site for these modification techniques within our region may encourage local foresters to incorporate them into logging practices, where appropriate.

Proposed Project

H. Project Description

A demonstration site will be selected and created, treatments will be documented in a report, and plots will be set up for future monitoring.

The specific restoration techniques demonstrated will depend on the forest site selected, and therefore on the opportunities to manipulate the stand. However, all efforts will be undertaken to demonstrate as wide a range of stand manipulations as possible. These will include topping trees to produce snags, girdling trees to provide a component of standing structure, felling trees for recruitment of coarse woody debris, and selective thinning to improve composition, growth and spatial patterns of residual trees. Topping will be done manually to produce standing snags. A variety of cavity nesting habitats will be constructed in them for use by birds and small mammals. Cavities may also be built in live trees. Downed woody debris is a source of habitats for ground nesting and denning wildlife. Downed wood will be manipulated in a similar manner as standing trees to produce enhanced habitats for cavity using wildlife at or near the forest floor. Depending on the size and species of trees available, larger cavities suitable for use by martin, fisher or bear may be constructed. If the demonstration site is located in a riparian reserve zone, consideration will be given to manipulating thinnings to produce self-stabilizing woody debris structures instream to enhance fish habitat.

I. Function

The demonstration site will allow local foresters to see how the techniques to create old growth attributes can be used operationally. Previous literature or treatments on the BC coast do not have the same effect in encouraging the use of new techniques.

J. Sustainable Forest Management

Maintenance of biodiversity and wildlife habitat are key issues in sustainable forest management.

K. Location

Site selection for the demonstration site will be part of the project cost, and therefore has not been done. However, it will be in Weldwood's (Williams Lake) operating area in the Horsefly Forest District. The techniques to be demonstrated will be applicable to the Cariboo-Chilcotin Region.

L. Timeframe

The installation of the demonstration site will be done in the 2001 field season. Monitoring of specific features and tours of the site may continue several years into the future, but the main goal of the project will be achieved in 2001.

M. Benefits

- A demonstration site for creation of old growth attributes will be installed.
- May encourage forest managers to use techniques to help maintain wildlife habitat and biodiversity in managed stands.
- Tours will increase the awareness of biodiversity among local forest managers.
- Potential that use of techniques could allow partial cutting to occur in areas where harvesting is constrained by biodiversity targets

N. Performance Indicators

- A successfully installed demonstration site with a variety of techniques for creating old growth attributes.
- A field tour of sites with agency and licensee representatives.
- The possibility to assess structures several years after treatment, to determine if techniques have been successful in creating the intended wildlife habitat feature. Wildlife use and/or potential for use should be assessed.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
	$3,000	$15,000				$18,000

Number	**SSFM-07**
Title	**Old and Mature Forest Attribute Definition, Cariboo Region (Year 2)**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview
The forest attributes that best describe mature and old forests in selected ecosystems in the Cariboo Region need to be defined. This is an issue because forest age (i.e. currently available on forest cover maps) is not an adequate descriptor of true mature and old forests. Targets in the CCLUP have been set for certain amounts of mature and old forest by zones but the definition of these targets has yet to be determined. This is a critical definition that the Biodiversity Committee is currently working on.

B. Use of New Knowledge
This definition is needed to fully address CCLUP implementation and Land Use Planning. It also has implications for implementation of the Biodiversity Guidebook and potentially TSR (since only required timber will be set aside and no extra).

C. Relationship to Sustainable Forest Management
There is a risk that biodiversity of our ecosystems (i.e. maintenance of true "old" and "mature" stands) will be compromised. There is also a risk that more timber in certain age classes may be set aside in OGMAs, WHAs, Wildlife Tree Patches, etc. than is truly necessary.

D. Use of Improved Knowledge
This knowledge will provide more certainty for strategic planning and will outline what timber is accessible for harvesting and which areas are set aside for biodiversity reasons.

E. Challenges and Constraints
None anticipated.

Knowledge Gaps

F. Existing Information
Preliminary work done by the Biodiversity Committee, as well as the products from the first year of this project, will be available.

G. Knowledge Gap
There is no concrete definition of mature and old stands, although these terms have been used in the Integration Report and CCLUP. Therefore, nobody is clear on how to proceed with setting aside the best stands to meet the old and mature stands by Landscape Unit or NDT.

Proposed Project

H. Project Description
This year of the project will build upon data and preliminary definitions resulting from work in year one (2000/2001). The project will include compilation of data relevant to attribute- and process-based definitions of seral stage in the Interior Douglas-fir biogeoclimatic zone and subzones within the Cariboo Forest Region. Field testing of attribute-based seral stage definitions for the IDF subzones will be conducted. Seral stage definitions will be developed and tested for other forest types and silvicultural systems over the proposed five-year duration of the project.

I. Function

This project will provide stand attribute descriptions for maintenance of biodiversity and maximum timber flow.

J. Sustainable Forest Management

Sustainable forest management decisions will result in a balance between biodiversity (particularly mature and old forests) and forest harvesting practices.

K. Location

Region wide (by biogeoclimatic subzone over time), Cariboo Forest Region.

L. Timeframe

5 years.

M. Benefits

Benefits include maximum timber flow under the rules of maintaining true mature and old stands.

N. Performance Indicators

A clear definition will emerge after field testing for each biogeoclimatic subzone in the region.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	$50,000	$50,000	$50,000	$50,000	$50,000	$250,000

Number	**SSFM-08**
Title	**Seral Contribution of Mountain Pine Beetle and Problem Forest Type Stands in the Cariboo Forest Region**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

Stands susceptible to Mountain Pine Beetle (MPB), as well as Problem Forest Type (PFT) stands, are both scheduled for priority harvest in the Cariboo Forest Region. The former are part of ongoing forest health and timber salvage action, and the latter is potentially a mitigating strategy to minimize the AAC falldown effect (especially in the Williams Lake TSA). These two stand types are believed to make up a significant portion of the mature and old forest in SBPS, MS and IDF pine ecosystems, primarily in the Chilcotin and Quesnel Forest Districts, but the extent of that contribution is not known. Targeted priority harvest of these stand types represents potential risks to meeting mature/old forest biodiversity targets, however the extent of these risks are also not known. The purpose of this project is to address these two knowledge gaps by:

- assessing the current and future contribution of these two stand types to mature/old forest biodiversity targets in the affected landscapes, primarily in Quesnel and Chilcotin Forest Districts,
- assessing the impacts of various harvest levels of MPB and PFT stands on mature/old forest biodiversity targets, and
- identifying options at both the TSA and landscape unit levels for balancing forest health and AAC maintenance/community stability issues with CCLUP biodiversity targets.

B. Use of New Knowledge

This new knowledge will provide important guidance for upcoming decisions for setting harvest levels, for both MPB-susceptible and PFT stands, that support forest health and timber supply interests while at the same time maintaining biodiversity values for both CCLUP implementation and wood products certification.

C. Relationship to Sustainable Forest Management

Failure to address these knowledge gaps represents a high degree of risk that could cause either of these two situations:

1. Harvest levels will be set for MPB-susceptible and PFT stands that result in failure to meet mature/old forest biodiversity targets, or
2. Harvest levels will be unnecessarily constrained at the expense of forest health or timber supply/community stability.

Either scenario represents a failure to maintain a sustainable balance between environmental, timber and socio-economic values, and significant risk and uncertainty to those values.

D. Use of Improved Knowledge

Addressing the knowledge gap at this time will enable sustainable forest management decisions to be made that result in maintaining an optimal balance between harvesting MPB and PFT stands for forest health and timber supply values, and maintaining mature and old forests for biodiversity values.

E. Challenges and Constraints

To integrate strategically obtained field data for MPB-susceptible and PFT stands to obtain the best interpretation of existing forest inventory and stand attribute information regarding their seral status and contribution.

Knowledge Gaps

F. Existing Information
The existing forest inventory and operational and other knowledge regarding MPB-susceptible and PFT stands; and projected harvest levels and seral condition for the affected landscapes.

G. Knowledge Gap
The current and future contribution of MPB-susceptible and PFT stands to mature and old seral biodiversity targets in the affected SBPS, MS and IDF pine ecosystems is not known. The impacts of various harvest levels of MPB-susceptible and PFT stands on mature/old forest biodiversity targets are not known.

Proposed Project

H. Project Description
The first year of the project will have obtained initial information regarding the current contribution of MPB-susceptible and PFT stands to mature and old seral biodiversity targets in the affected NDT3 ecosystems. This will be based primarily on GIS analysis of the existing forest inventory, supplemented with initial fieldwork assessing the seral status of these stands with respect to mature and old forest attributes. This second and final year of the project will:

- link with the results of the Old and Mature Forest Attributes project (focusing on Douglas-fir NDT4 ecosystems) to provide a more accurate and useable framework for assessing seral status and contribution of NDT3 ecosystems, and strategically supplement field data if required to make refinements with respect to definition of seral attributes and status, and
- project the seral contributions of MPB and PFT stands over time in association with harvest levels to identify options for balancing MPB/PFT stand harvest levels with biodiversity targets.

I. Function
The project will identify MPB/PFT stand harvest levels that can be maintained in various landscapes without jeopardizing achievement of mature/old forest biodiversity targets.

J. Sustainable Forest Management
The project will enable sustainable forest management decisions to be made that result in maintaining an optimal balance between harvesting MPB and PFT stands for forest health and timber supply values, and maintaining mature and old forests for biodiversity values.

K. Location
Primarily SBPS, MS and IDF pine ecosystems in the Chilcotin and Quesnel Forest Districts. The specific areas chosen will have broader application to similar ecosystems across the Cariboo Forest Region (primarily in the Williams Lake and 100 Mile Forest Districts).

L. Timeframe
This will be year two of probably a two-year project.

M. Benefits
By identifying MPB/PFT stand harvest levels that can be maintained in various landscapes without jeopardizing maintenance of biodiversity targets, the project will:

- Enable sustainable forest management decisions to be made that result in maintaining an optimal balance between harvesting MPB and PFT stands for forest health and timber supply values, and maintaining mature and old forests for biodiversity values.
- Minimize risk and uncertainty to forest health, timber supply and the mature/old forest component of biodiversity values.

N. Performance Indicators

Identification of MPB/PFT stand harvest levels that can be maintained in various landscapes without jeopardizing maintenance of biodiversity targets.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$50,000	$50,000	($25,000?)				

Number	**SSFM-09**
Title	**Silvicultural Systems for Douglas-fir Stands on Very Deep Snowfall Mule Deer Winter Ranges in the Cariboo Forest Region**
Proponent	**Ken Soneff, MOF Research**

Description of Issue

A. Overview

In the ICHmk3 biogeoclimatic subzone in the Cariboo Forest Region, Douglas-fir stands tend to be even-aged. These seral forests are eventually replaced with western red cedar—subalpine fir climax communities. Douglas-fir stands within this wetbelt ecosystem are important to the forest industry and to wildlife. They are particularly valuable as mule deer winter range because of the snow interception cover, thermal cover, and Douglas-fir forage provided by mature and older trees. Douglas-fir stands in these ecosystems are typically clearcut, which effectively removes large portions of the winter range for long periods of time. Furthermore, regenerating these large clearcuts with Douglas-fir is often difficult due to frost, snow press and/or vegetation competition. The typical silvicultural system used on Mule Deer Winter Range (MDWR) in uneven-aged Douglas-fir is low-volume, single tree selection. This system is not ecologically appropriate for these even-aged stands.

B. Use of New Knowledge

Knowledge gained from this pilot study will be used in implementation of the CCLUP Mule Deer strategy and Mule Deer targets.

C. Relationship to Sustainable Forest Management

Currently, many of these stands are deferred from harvesting. This research will also add to our understanding of Douglas-fir natural regeneration dynamics and to the environmental conditions required for re-establishing Douglas-fir on these sites after harvesting.

D. Use of Improved Knowledge

Armleder *et al.* (1986) developed the *Handbook for Timber and Mule Deer Management Co-ordination on Winter Ranges in the Cariboo Forest Region* to provide information on harvesting drybelt Douglas-fir stands on low to deep snowfall MDWRs. It is the main management tool used by the forest industry and government for developing MDWR plans, operational plans and silviculture prescriptions. This research project will contribute valuable data and information towards updating the handbook to include very deep snowfall MDWRs. Information on regeneration requirements will benefit operational staff in the preparation of silvicultural prescriptions for even-aged interior Douglas-fir stands in wetbelt ecosystems.

E. Challenges and Constraints

Resistance to adopting the alternative silvicultural system due to increased cost and effort.

Knowledge Gaps

F. Existing Information

None.

G. Knowledge Gap

The need to develop an ecologically appropriate silvicultural system on these MDWRs.

Proposed Project

H. Project Description

This is a pilot project to explore various opening sizes that could be used in conjunction with group selection, patch cut or clearcutting silvicultural systems on very deep snow pack MDWR. The main objectives are to ensure regeneration success and maintain mule deer use.

A study site, situated on MDWR, has been selected and pre-harvest data collection began in 1996. Twenty percent of the 90 ha block was harvested in openings, roads and landings in the fall of 1997. Four opening sizes were harvested: 0.25 ha (15m x 180m), 0.50 ha (30m x 180m), 1 ha (60m x 160m) and 2 ha (60m x 320m). Opening widths were chosen to represent 0.5, 1 and 2 tree heights. Same-sized openings are paired on the block according to soil moisture regime: one opening is treated as the control and the other opening will receive a specific treatment (eg. site preparation, different slope orientation). All openings are planted with Douglas-fir, and natural regeneration ingress will be monitored along with seedling survival and growth. Seed fall and vegetation response will also be monitored in a portion of the openings. Measured variables (eg. seedling growth, vegetation cover) will be compared between treatment and control openings using t-tests.

I. Function

There is an opportunity to expand this project into a replicated research trial at a later date. Information collected during the pilot trial is essential to designing that project and will be used to guide managers on silvicultural options in the interim on very deep snowpack winter ranges.

J. Sustainable Forest Management

This research will also add to our understanding of Douglas-fir natural regeneration dynamics and to the environmental conditions required for re-establishing Douglas-fir on these sites after harvesting.

K. Location

This particular project is located at Viewland Mountain in the ICHmk3 near Horsefly. It has broad application in all high snowfall MDWRs in the Cariboo Forest Region, in particular in the 100 Mile, Horsefly and Quesnel Forest Districts.

L. Timeframe

This project will be monitored until at least free-growing (approximately 7 to 12 years).

M. Benefits

This study will provide useful information for regenerating Douglas-fir within the ICH in conjunction with various silvicultural systems.

N. Performance Indicators

Measuring/monitoring of regeneration and vegetation, deer use, seed fall, windthrow, bark beetles and Armillaria root disease.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$80,000	$15,000	$5,000	$36,000	$22,000	$37,000	$199,000

Number	**SSFM-10**
Title	**Mule Deer Winter Range Stand Structure Mapping and Development of Mule Deer Winter Range Management Plans**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

Mule deer are a regionally important species. They require mature and old stands with good snow interception and forage supply in order to survive the Cariboo winters. These critical stands also have high timber values. Mule Deer Winter Range (MDWR) Management Plans, which will address timber access and sustainable harvest while managing for mule deer habitat, are required for 98 winter ranges across the Cariboo Forest Region. Stand structure mapping is the first step in gathering ecological information required to prepare the management plans. Stand structure mapping has been completed for 26 MDWRs.

Preparation of the MDWR Management Plans is the responsibility of the MDWR Working Group. Support is required for creation of the management plans in the form of: helicopter time to conduct flights over MDWRs to apply stand structure mapping results and look at any suspected problems (which cannot be tied to the project since the timing of management plan creation and project completion always crosses fiscal deadlines and the money cannot be carried over). As well, funding is required for GIS support for dozens of iterations of maps required for the Plans (i.e. zone maps, short and long term objective maps etc.), data compilation, and sampling of basal area (and other attributes) in the IDFdk3 area south of 100 Mile and transition zones away from the typical IDF wintering areas (this will assist with creation of rules regarding harvesting availability, methods etc.).

B. Use of New Knowledge

The information supplied by the stand structure mapping will directly feed into management plan development. Management plans will provide more certainty regarding mule deer habitat and harvesting on MDWRs as directed in the Integration Report for the CCLUP. This will solve many conflicts and issues as identified in the CCLUP. It should also contribute to the TSR and certification.

C. Relationship to Sustainable Forest Management

If this issue is not resolved then there will always be conflicts and uncertainty about harvesting on the MDWRs in the Cariboo Region.

D. Use of Improved Knowledge

The certainty and identification of harvesting opportunities over the long term brought forward by the management plans will directly address sustainable forest management.

E. Challenges and Constraints

The biggest challenge is mapping attributes that mule deer require in the winter, using the maps to help develop rules regarding long-term timber access and deer management, and writing the management plans for the MDWRs in the entire region.

Knowledge Gaps

F. Existing Information

The MDWR boundaries have been mapped and field-verified so the actual areas for stand structure mapping and plan creation are established. Other examples of existing information used for management plan creation are the private land GIS layer, Mule Deer Handbook (and associated local research), and basal area cruising information.

G. Knowledge Gap

There is no current up-to-date mapping for the regional MDWRs that includes accurate measurable attributes important to mule deer (i.e. age class and crown closure does not provide enough information to describe all of the stand attributes that contribute to mule deer winter range). Stand structure mapping has been established to map attributes important to mule deer.

Proposed Project

H. Project Description

Stand structure mapping projects involve: air photo interpretation and ground truthing of slope, aspect and stand structure attributes important to mule deer; database creation; and GIS mapping. Once the mapping is complete, MDWR management planning begins. Preparation of a management plan is a very involved process. The winter range is divided into management zones, preliminary habitat objectives are set, the data are analyzed and compared to the CCLUP Integration report and to the Mule Deer Strategy and Mule Deer handbook, iterations of maps are produced, and the long term objectives and transition strategy evolve.

I. Function

Described above under Description of the Issue.

J. Sustainable Forest Management

This project is directly tied to sustainable forest management by providing guidance, certainty, and available volume and mule deer habitat over time.

K. Location

Every forest district in the Cariboo Region.

L. Timeframe

Completed by 2005.

M. Benefits

Filling information gaps for CCLUP and TSR including: amount, location and timing of available volume; mature and old seral requirements; Old Growth Management Areas and Wildlife Tree Patch requirements.

N. Performance Indicators

Success of the Management Plans will be measured by long-term access to timber, achieving mule deer habitat objectives as described in CCLUP and the Plans, and successful monitoring of the MDWR Management Plan.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
	$72,000	$180,000	$180,000	$180,000	$180,000	$792,000

Number SSFM-11
Title Mule Deer Use and Silvicultural Systems on Wetbelt Winter Ranges
Proponent Karen Campbell, Weldwood

Description of Issue

A. Overview

Much is known about mule deer use on drybelt winter ranges in this region; however, little research has been done in the wetbelt and transition winter ranges. Management plans are required for these winter ranges under the Mule Deer Strategy of the CCLUP. Any information that can be gathered on mule deer use, habitat conditions and silvicultural systems within these winter ranges will be helpful to the planning process throughout the wetbelt, the eastern part of the region in all three TSAs.

B. Use of New Knowledge

Information collected in this study will contribute to mule deer winter range (MDWR) plans, which are key to the Mule Deer Strategy of the CCLUP. Having these plans in place will benefit the short-term timber supply, and will also help companies achieve objectives set out in their certification process.

C. Relationship to Sustainable Forest Management

Gathering more information on wetbelt winter ranges will help to create management plans that are better able to fulfill the needs of mule deer. The completion of management plans that are integrated with other values in the CCLUP will benefit short-term timber supply.

D. Use of Improved Knowledge

Sustainable forest management includes management for wildlife habitat. This study will improve the knowledge base on mule deer in wetbelt winter ranges, and thus allow better management for mule deer habitat.

E. Challenges and Constraints

Knowledge Gaps

F. Existing Information

Mule deer use and silvicultural systems in drybelt winter ranges have been studied extensively over several years. Some of this information will be applicable to the wetbelt. There is also a silvicultural systems trial on Viewland Mountain, which is looking at small patch cutting as one way to address harvesting and mule deer habitat in the wetbelt.

G. Knowledge Gap

Mule deer use and habitat requirements in the wetbelt have not been studied in this region.

Proposed Project

H. Project Description

A graduate student will be supported to do a Masters thesis on this topic. The student will write the proposal and thus clarify exactly what the project will entail. The topic should focus on mule deer use, habitat conditions, and/or silvicultural systems. Snow surveys under different canopy conditions are a potential topic. The proposal will be discussed with Weldwood, MELP, the MOF Research section and the UBC Alex Fraser Research Forest.

I. Function

Data gathered from this study will provide better information for the preparation of MDWR management plans in the wetbelt winter ranges.

J. Sustainable Forest Management

SFM includes the maintenance of wildlife habitat. The more information we have, the better able we are to manage for wildlife habitat.

K. Location

The study will take place on the Horsefly Lake mule deer winter range. Results are expected to be applicable to all other wetbelt mule deer winter ranges across the three TSAs.

L. Timeframe

The majority of the data collection and analysis will likely be finished within the 2001/2002 fiscal year. The student's thesis will likely extend beyond this time, but the data will be available for use soon after the field work is done.

M. Benefits

This project is expected to provide better information on mule deer use and habitat within winter ranges. The information will be used in the creation of mule deer winter range management plans under the CCLUP. The use of better information which is supported by agencies, licensees, and academia will lend more support to future management plans, making the implementation of the mule deer strategy smoother and quicker and increasing certainty in the timber supply from these areas.

N. Performance Indicators

A complete data set and brief report on the topic agreed to by Weldwood, MELP, MOF and the UBC Alex Fraser Research Forest.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
	0	$20,000				$20,000

Number	**SSFM-12A and 12B**
Title	**Alternative Silvicultural System Adaptive Management Trials in Caribou Habitat**
Proponent	**Ken Soneff, MOF Research**

Description of Issue

A. Overview

Pilot and replicated research trials have been developed jointly by MOF researchers, MELP staff, MOF district staff and licencees, in order to test silvicultural systems that will enable commercial harvesting, yet maintain suitable habitat for caribou in the Cariboo Forest Region. These projects address the concerns for high-elevation caribou populations in the Quesnel Highland east of Likely and the northern caribou population in the Itachz-Ilgatchuz area northwest of Alexis Creek. The replicated research trials include investigation of the effects of harvesting on not only caribou, but also lichen, windthrow, natural and artificial regeneration, and bird populations.

There is sufficient knowledge and understanding gained from the existing research trials to progress into an adaptive management phase of testing these group selection silvicultural systems on a large area.

B. Use of New Knowledge

Knowledge gained from these adaptive management studies will be used in implementation of the CCLUP Caribou strategy and Caribou targets.

C. Relationship to Sustainable Forest Management

In the eastern part of the Cariboo Forest Region, caribou habitat above 1500 m elevation is deferred from harvesting until an accepted strategy is completed that will address habitat needs. This research will also add to the understanding of natural regeneration, artificial regeneration and snowmelt in the ESSF.

Within the Cariboo Forest Region, northern caribou are considered a key management species. Under the Cariboo-Chilcotin Land Use Plan, about 21% (202,000 ha) of northern caribou habitat will become available for timber extraction using "modified harvesting" practices.

Alternative silvicultural systems are being tested for their effectiveness in reducing the impact of harvesting on caribou habitat, particularly on important lichen forage species. Before the alternative silvicultural systems are recommended, other issues such as tree regeneration, windthrow, wildlife diversity, forest health, and long-term tree productivity must also be investigated. This research project provides the opportunity to study each component relative to the others and will result in an integrated resource management solution.

D. Use of Improved Knowledge

The knowledge gained from this phase of the project will help to refine the caribou strategy under the CCLUP, particularly pertaining to use of these alternative silvicultural systems on an operational scale.

E. Challenges and Constraints

One constraint is that the stumpage appraisal system does not reflect the increased cost of logging and operating using alternative silvicultural systems. The Mount Tom project will address this challenge through the involvement of FERIC and a UNBC harvesting professor (Dr. Hans Sup-Han) in collecting detailed cost data.

Knowledge Gaps

F. Existing Information

A pilot and replicated research trial in the ESSF already exists near Likely, BC in the Cariboo Forest Region. This project has been monitored since 1992. Results and progress to date have recently been summarized in extension notes and publications. There are several other provincial projects looking at regeneration and alternative harvesting in the ESSF, including Sicamous Creek in the North Okanagan, and Pinkerton Mountain east of Prince George.

A pilot and replicated research trial also exists in the MS/SBPS near Satah Mountain, north of Puntzi Lake. This project has been monitored since 1996.

G. Knowledge Gap

These projects will apply alternative silvicultural systems on a larger scale, to determine the response of caribou, natural and artificial regeneration, snowmelt, and other wildlife to the modified harvesting prescription.

Proposed Projects

12A. Mt. Tom Adaptive Management

H. Project Description

The Mount Tom adaptive management trial represents the third phase (after the pilot and replicated research phases) of our research to develop integrated solutions to managing caribou habitat within a managed forest environment. This phase will apply the silvicultural system at a landscape scale which will allow testing of the caribou response, as well as examining the operational logistics (FERIC will collect cost data) of the system. Approximately 1200 ha will be fully developed over the next few years, while over 2000 ha has been deferred from harvest to serve as a control for the trial. A co-operative agreement with MELP has been established to track the response of radio-telemetry equipped caribou to the development. Harvesting is scheduled to start in phase 1 in the winter of 2000/01. (It was delayed from last winter due to bark beetle salvage.) We were able to obtain base MOF regional funds, and FRBC funds via Weldwood Ltd., to collect pre-treatment lichen abundance and distribution data, and to stratify the block by ecological site series. Site preparation and planting options are currently under discussion.

Approximately 1200 ha will be fully developed with modified harvesting over the next few years while over 2000 ha have been deferred from harvest to serve as a control for the trial. All prescriptions will be based on a 33% volume removal but the size of the removal group varies between 0.1 to 1.0 ha.

I. Function

Information is needed from operational application of this type of harvesting on a large scale. Using adaptive management methods will ensure the information is gathered in a useful and well document fashion.

J. Sustainable Forest Management

This phase of the research on alternative silvicultural systems will add to our understanding of all aspects of applying these silvicultural systems from harvesting to regeneration, as well as their effects on caribou.

K. Location

The project is located at Mount Tom/Hardscrabble Mountain, near Wells, BC.

L. Timeframe

The project will be monitored periodically in the next 20 years and beyond. This is an adaptive management trial. Results and lessons learned from monitoring will be used immediately to adjust the Caribou strategy, including any future silviculture prescriptions in a process of continual improvement.

M. Benefits

The main benefit will be firsthand experience and effect of these alternative systems on a large scale.

N. Performance Indicators

This project will monitor natural regeneration, artificial regeneration, windthrow, snow melt, lichen and caribou response to large scale alternative silvicultural systems.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$4,000	$50,000	$50,000	$50,000	$50,000	$50,000	$254,000

12B. Satah/Chezacut Adaptive Management

H. Project Description

The modified harvesting practices tested in the research and adaptive management alternative silvicultural systems trial near Satah Mountain are being implemented operationally by Riverside Forest Products and Tsi Del Del, the major licencees in the northern caribou habitat within the Williams Lake TSA. There are now approximately 2000 ha harvested using the alternative silvicultural systems.

Harvesting was completed in the Satah adaptive management block (600 ha) in March 1998. Harvesting in the second adaptive management block (about 800 ha), located below Baldface Mountain, was completed by March 2000.

I. Function

Information is needed from real-life application of this type of harvesting on a large scale. Using adaptive management methods will ensure the information is gathered in a useful and well document fashion.

J. Sustainable Forest Management

Alternative silvicultural systems are being tested for their effectiveness in reducing the impact of harvesting on caribou habitat, particularly on important lichen forage species. Before the alternative silvicultural systems are recommended, other issues such as tree regeneration, windthrow, wildlife diversity, forest health, and long-term tree productivity must also be investigated. This research project provides the opportunity to study each component relative to the others and will result in an integrated resource management solution.

K. Location

The project is located near Satah and Baldface Mountains, northwest of Alexis Creek.

L. Timeframe

The project will be monitored periodically in the next 20 years and beyond. This is an adaptive management trial. Results and lessons learned from monitoring will be used immediately to adjust the Caribou strategy, including any future silviculture prescriptions in a process of continual improvement.

M. Benefits

The main benefit will be firsthand experience and effect of these alternative systems on a large scale.

N. Performance Indicators

This project will monitor natural regeneration, artificial regeneration, windthrow, lichen and caribou response to large-scale alternative silvicultural systems.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$10,000	$26,400	$26,400	$26,400	$26,400	$26,400	$142,000

Number	**SSFM-13**
Title	**CCLUP Caribou Strategy – Objectives, Targets and Monitoring of Caribou Populations and Habitat Use**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

Caribou populations within the region are considered regionally, provincially and nationally significant. The entire regional caribou population is considered threatened nationally, while mountain caribou in the eastern portion of the region are red-listed provincially. The CCLUP Higher Level Plan specifically provides for special management of several populations within the region (eastern caribou and Itcha-Ilgachuz caribou).

B. Use of New Knowledge

Work is ongoing to develop strategies that maintain the caribou population and their habitat, while integrating other values such as timber harvesting, biodiversity, predation levels and winter recreation, as directed by the Higher Level Plan objectives and implementation process.

C. Relationship to Sustainable Forest Management

It is critical that adaptive management and operational trials be continued and monitored, to allow for the development of methods of timber harvesting that are compatible with maintaining caribou and caribou habitat values and achieve the balance as described in CCLUP.

D. Use of Improved Knowledge

Improved knowledge through operational logging trials and caribou habitat use monitoring will allow for implementation of specialized silvicultural systems within the modified harvest areas identified for caribou. A better understanding of how timber harvesting and associated road access may influence wolf predation levels on caribou is essential to maintaining caribou populations, considering the region's present predator-prey system.

E. Challenges and Constraints

There is some risk that the proposed strategy will not successfully maintain caribou over the long term, particularly mountain caribou, which are now provincially red-listed.

Knowledge Gaps

F. Existing Information

Benchmark information on caribou population distribution, size and trend, and landscape level habitat use patterns has been collected for the Wells Gray North, Barkerville, Itcha-Ilgachuz and Rainbow Mountains herds. Adaptive management logging trials have been initiated within caribou habitat both in the eastern and western portions of the region.

G. Knowledge Gap

We require additional population and habitat use information for the Charlotte Alplands herd and a better understanding of the stand-level response by caribou to adaptive management logging trials. Monitoring of population numbers and trends is required. Also, a better understanding of wolf predation levels on caribou and how they might be influenced by timber harvesting practices, particularly in relation to road development, is required to better understand limiting factors to local caribou populations.

Proposed Project

H. Project Description

Monitor and report on caribou population dynamics and habitat use. This will include:

1. Ongoing population surveys of all caribou herds within the region.
2. Monitoring of habitat use by radio-collared caribou in relation to adaptive management trials in the vicinity of Mt. Tom within the Quesnel District.
3. Monitoring of habitat use by radio-collared caribou within the Charlotte Alplands herd.
4. Monitoring of habitat use, at the stand level, of caribou in relation to adaptive management trials in the Satah Mountain area.
5. Monitoring of wolf habitat use and foraging strategy, in relation to timber harvesting and road development, within the range of eastern caribou.

I. Function

The overall project will provide a baseline understanding of caribou population and habitat use patterns and then monitor their response to initiated adaptive management trials. This will allow for development of a risk assessment to determine the magnitude of various downward pressures on maintaining viable caribou populations. Monitoring of wolves within eastern caribou range will give a better understanding of their influence on caribou populations within the area.

J. Sustainable Forest Management

Development of silviculturally viable modified harvest prescriptions is required to insure sustainable forest management.

K. Location

The project and Caribou Strategy are regional in scope and application.

L. Timeframe

Ongoing.

M. Benefits

Implementation of the regional caribou strategy as directed by CCLUP.

N. Performance Indicators

Caribou population distribution, size and trend and caribou habitat use preferences.

O. Cost

Ongoing components of projects (#s 1, 2 and 3 in H.)

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Unknown	$222,050	$165,000	$165,000	$90,000	$80,000	$722,050

Monitoring of caribou response to adaptive management trials at Satah Mtn. (# 4 in H.)

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
None	None	$45,000	$45,000	0	0	$90,000

Monitoring of wolf habitat use and foraging strategy (# 5 in H.)

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Unknown	0	$100,000	$100,000	$100,000	$50,000	$350,000

Number SSFM-14
Title Cariboo-Chilcotin Furbearer Inventory
Proponent Chris Swan, MELP

Description of Issue

A. Overview

A major shortfall of information exists on the distribution, abundance and habitat requirements (both stand and landscape level) for all biogeoclimatic zones of the 17 different species of furbearers located within the Cariboo Forest Region. The limited information base is especially concerning for low density and low reproductive species such as fisher and wolverine, and for species that require large home ranges, such as lynx and bobcat. As well, fisher and wolverine are blue-listed species.

B. Use of New Knowledge

The CCLUP directs that habitats will be managed for furbearers. Due to the lack of information, minimal input has gone into the protection of furbearer habitat in the forest development planning process. There is no preliminary information available on furbearer presence or absence prior to logging, or their habitat requirements. Information describing presence and absence, as well as habitat preferences and requirements, for each species will be used to develop stand- and landscape-level habitat management measures for furbearer species.

C. Relationship to Sustainable Forest Management

The biggest concern with forest development, including silviculture treatments, is the impact on furbearers from timber harvesting, and whether the harvest prescriptions and landscape patterns meet the habitat requirements of furbearers and their prey. The risk of lack of knowledge in this area is a loss of furbearer numbers or species in the area, in addition to the inability to meet CCLUP requirements.

D. Use of Improved Knowledge

By obtaining knowledge on furbearer presence/absence and use of different habitats, implement better methods of sustainable forest harvesting to protect this group of species and meet CCLUP requirements.

E. Challenges and Constraints

To obtain good distribution and habitat use information for these low-density, reclusive species as cost-effectively as possible, by optimizing efficiency of sample design.

Knowledge Gaps

F. Existing Information

There is limited existing knowledge of furbearer use of different habitats (usually single species projects) from around the province, and none in the Chilcotin area.

G. Knowledge Gap

Presence and absence, density and habitat requirement information is lacking throughout the region for most furbearing species. Without this information, suitable input into the various land-based activities that may impact furbearer habitats and their distribution will not occur. Information gaps can be partially filled by establishing a long-term (5 year) snow tracking survey program in various biogeoclimatic zones in the Cariboo Region. This type of information collection will obtain data on presence and absence, as well as habitat requirements. Snow tracking techniques are also available to assess the impact of forest harvesting on furbearers before it occurs.

Proposed Project

H. Project Description

This project will see a continuation of the furbearer snow tracking transect methodology at the same locations previously established in the Anahim Lake area. The history of this project is that in the winter of 1998/99 a pilot project was established in the Anahim Lake area. Winter snow tracking of furbearers in different biogeoclimatic zones (at pre-established transect sites) was carried out in 1999/2000 and will occur in the winter of 2000/01 in co-operation with Yun Ka Whu'Ten Holdings Ltd. and MELP.

I. Function

The project will supply information previously unknown about furbearer distribution and habitat requirements in the west Chilcotin ecosystems, and will provide a base for further inventory elsewhere in the Cariboo Region.

J. Sustainable Forest Management

Knowledge from this project will enable stand and landscape measures for maintaining furbearer habitat requirements to be incorporated into forest harvesting plans. This will contribute directly to sustainable resource management by enabling furbearer species to be maintained in harvested landscapes.

K. Location

The project will occur in the Anahim Round Table area of the Chilcotin Forest District in the Williams Lake TSA. This type of project should be conducted in other biogeoclimatic zones of the region.

L. Timeframe

1999-2004.

M. Benefits

Increased knowledge of furbearer relative abundance and use of various habitats in the Chilcotin (this is also applicable to areas in the western part of the Quesnel Forest District), and enable implementation of CCLUP requirement to manage for furbearer habitat which to date has not been possible.

N. Performance Indicators

Correlation between habitat required by furbearers, and harvesting prescriptions and patterns which minimize negative impacts to furbearer numbers, distribution and success. An indicator of performance will be maintenance of similar pre-harvest abundance of furbearer species across the landscape as harvesting progresses through the current rotation.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$90,000	$65,000	$100,000	$100,000	$100,000	$0	$455,000

Number SSFM-15
Title Grizzly Bear Population and Habitat Inventory Requirements
Proponent Chris Swan, MELP

Description of Issue

A. Overview

Grizzly bear are an identified wildlife species in the Identified Wildlife Management Strategy, and parts of two population units within the region are considered threatened. The CCLUP Higher Level Plan implementation requires research and inventory on grizzly bear habitat and habitat protection needs (p. 161) to support resource management and future integrated resource management decisions. Population and habitat inventories are required to determine whether population unit objectives are being met with the land use management strategies implemented through the CCLUP. Habitat inventory – the mapping and evaluation of spring and summer grizzly bear habitat in important grizzly bear watersheds – will also provide important habitat information for planning purposes and CCLUP implementation.

B. Use of New Knowledge

The new knowledge will be used to assess the status of grizzly bear populations and to determine where grizzly bear habitat protection needs to be considered. The habitat inventory information will be used to identify critical areas of grizzly bear habitat for Wildlife Habitat Area (WHA) designation.

C. Relationship to Sustainable Forest Management

It is critical that grizzly bear habitat and populations are sustained during timber harvest development of forestlands. It will be important to be able to document stable or recovered status of grizzly bear populations in order to achieve forest company certification in some parts of the region.

D. Use of Improved Knowledge

Improved knowledge from population and habitat inventory may allow for implementation of specialized silvicultural prescriptions or forest planning that addresses maintenance of grizzly bear values within important grizzly bear watersheds.

E. Challenges and Constraints

Grizzly bear population inventory work is relatively expensive because of the difficulty in directly enumerating bears and due to the remoteness of much of the habitat range. A relatively large amount of funding is required over a multi-year period to undertake grizzly bear inventory work on a population unit basis. Habitat inventory work could be done on a watershed basis and would require a lower funding amount.

Knowledge Gaps

F. Existing Information

Benchmark information on grizzly bear population distribution, size and trend and habitat use patterns is completely lacking for the Cariboo Region. Existing knowledge of habitat capability and suitability is limited to small-scale mapping, which is not suitable for operational planning purposes. Some 1:50,000 TEM[1] products are currently under development in some parts of the region; however, these will need to supplemented or upgraded with more detailed grizzly bear habitat information in order to make them useful information for forest development planning.

G. Knowledge Gap

The identification of important habitat is necessary for stand-level habitat protection under the Forest Practices Code either as Wildlife Habitat Areas (WHAs) or as part of the Higher Level Plan. Knowledge of the population status is required to determine whether population unit objectives are being met with the land use management strategies implemented through the CCLUP.

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[1] Terrestrial Ecosystem Mapping

Proposed Project

H. Project Description

- Map and classify grizzly bear habitat and conduct overall habitat effectiveness evaluations in important grizzly bear watersheds in order to be able to evaluate habitat protection opportunities and individual WHA candidates for foraging and security areas.
- Conduct inventories of grizzly bear populations in the interior Cariboo population to establish knowledge of current population size and relative abundance, and to determine areas of critical grizzly bear habitat, with the priority for inventory based on the current population status (i.e. threatened populations have higher priority).

I. Function

The habitat mapping portion of the project will provide information for future logging development plans and identify candidate areas for WHAs or special forest management practices. The population portion of the project will provide a baseline understanding of grizzly bear population status in areas where populations are currently threatened or where habitat changes may affect population status in the future.

J. Sustainable Forest Management

In order to meet CCLUP (p. 156 and 158) and FPC requirements, inventory of grizzly bear populations and habitats is of high importance. Filling this knowledge gap will help in overall forest and land use planning because it will remove some of the uncertainty in planning forest development activities in important grizzly bear areas.

K. Location

Region-wide, but priority areas are (1) South Chilcotin, (2) Blackwater – West Chilcotin and (3) Quesnel Lake – Quesnel Highland.

L. Timeframe

Ongoing. Habitat inventories can be completed on a watershed basis in high priority areas across the region over a 5-year period: 2000/2001 to 2004/2005. Population inventory in three different population units will require a minimum of four years to complete (2001/2002 to 2004/2005), as the first year will need to focus on details of project design.

M. Benefits

Implementation of the grizzly bear population and habitat inventory as directed by CCLUP. Improved ability to incorporate grizzly bear habitat management measures into forest management.

N. Performance Indicators

Polygons of spring and summer grizzly bear habitat mapped and evaluated on 1:20,000 TRIM sheets for important drainages of the Cariboo Region, and grizzly bear population status information on a Grizzly Bear Population Unit basis.

O. Cost

Project	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Habitat Inventory	$50,000	$50,000	$50,000	$50,000	$50,000	$250,000
Population Inventory	$0	$50,000	$250,000	$250,000	$250,000	$800,000
Total	$50,000	$100,000	$300,000	$300,000	$300,000	$1,050,000

Number SSFM-16
Title Mountain Goat Habitat and Animal Inventory
Proponent Chris Swan, MELP

Description of Issue

A. Overview

Mountain goats are considered to be both regionally and provincially significant species and are included in the Identified Wildlife Management Strategy (IWMS). Although some population inventories have been conducted in recent years, there are still considerable knowledge gaps for some areas and populations. Population and habitat inventories are needed to aid in sub-regional and landscape planning levels. Critical areas of importance are the identification of natal areas, winter ranges and mineral licks, as well as population monitoring. Geographic area would involve the Chilcotin ranges and Quesnel Highland.

B. Use of New Knowledge

The new knowledge would be used to mitigate industrial and recreational activities near or within sensitive areas such as natal areas and winter ranges. Mountain goats are sensitive to disturbance and both recreational and industrial activities can have an impact on the use of key seasonal habitats. The inventory information would be used to identify critical habitats for planning purposes and potentially WHA status. In addition, silvicultural practices such as domestic sheep grazing for vegetation control purposes pose a serious threat in the form of disease transmission. It is important that critical mountain goat habitats be identified and mapped so that adequate buffers can be established between goat ranges and areas used for domestic sheep grazing.

C. Relationship to Sustainable Forest Management

Mitigating the impacts of forest development a provincially significant species such as mountain goat would be a positive step in demonstrating that forest development can occur in an environmentally sustainable manner.

D. Use of Improved Knowledge

Improved knowledge from population and habitat inventory would allow for the establishment of mitigative measures to protect sensitive sites.

E. Challenges and Constraints

Knowledge Gaps

F. Existing Information

Some baseline mountain goat inventory has been completed. Of 21 identified inventory units in the eastern mountain ranges (Quesnel Highlands, Cariboo Mountains etc.), approximately 50% of the units have some baseline summer goat inventory and four of 21 mountain blocks have winter inventory. In the western mountain regions (Chilcotin Ranges and eastern Coast Mountains), approximately 60% of the mountain blocks have some baseline summer goat inventory and only a few of these blocks have any form of winter inventory (20%). 1: 50,000 TEM mapping exists for all of the eastern ranges. Some limited 1:50,000 TEM mapping exists for portions of the western mountain ranges (approximately 10-20%).

G. Knowledge Gap

Animal inventory:

- Conduct some baseline population inventory to determine status of mountain goats and the extent of their current range within the region. A considerable portion of the region has not previously been inventoried and is lacking basic information on current population status (presence and absence) and extent of range use.

Habitat inventory:

- Locating and mapping of key natal sites and winter ranges. This information would be valuable for sub-regional planning purposes to establish timing windows to mitigate concerns regarding industrial and tourism operations near these critical areas during sensitive natal and winter periods. In the case of natal areas, this would aid in the establishment of WHAs for these critical sites.
- Conduct TEM in some selected areas to allow for accurate quantification of the distribution, availability and condition of key habitats. Although there is considerable overlap with existing TEM, some gaps remain and some older TEM may have to be updated.

Population monitoring:

- Continue some periodic population monitoring to ensure that mitigative measures are adequate to sustain herd health and that populations are being maintained at adequate levels.

Proposed Project

H. Project Description

- Conduct baseline animal inventory for those mountain blocks where no inventory is available or the existing inventory is so outdated that it is considered suspect.
- Map and classify winter and spring habitat to identify critical winter ranges and natal areas.

I. Function

The habitat mapping portion of the project will provide information for future forest development planning and other land use planning initiatives. It may also identify possible candidate areas for WHA's.

J. Sustainable Forest Management

K. Location

Region-wide; however, some priority areas are: (1) the mountain ranges south of Quesnel Lake, (2) Charlotte Alplands, and (3) the mountain ranges between the Homathko and Klinaklini Rivers.

L. Timeframe

Ongoing, 3 to 5 years.

M. Benefits

Protection of critical mountain goat habitats.

N. Performance Indicators

Completion of animal and habitat inventories and identification and mapping of sensitive sites and winter ranges.

O. Cost

Project	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Population Inventory		$50,000	$30,000	$10,000	$10,000	**$100,000**
Habitat Inventory		$60,000	$30,000	$30,000	$30,000	**$150,000**
Total		**$110,000**	**$60,000**	**$40,000**	**$40,000**	**$250,000**

Number	**SSFM-17**
Title	**CCLUP Moose Strategy – Objectives, Targets and Monitoring**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

As a requirement of the CCLUP, wetlands designated as important to moose, especially those utilized during the winter months, need to be identified in areas of high importance to moose in the Cariboo Region. Forested buffers around the wetlands and forest harvesting techniques within or adjacent to buffers will need to be developed. The purpose of the forest buffers adjacent to wetlands is to meet thermal and security cover requirements for moose. Several projects are currently underway to classify wetland types on 1:20,000 mapsheets and to develop criteria to determine the importance of different wetland types to moose. These are co-operative working projects between Riverside Forest Products, Yun Ka Whu'ten Holdings and MELP.

In order to aid in determining adequate buffer width and characteristics on the perimeter of wetlands to meet moose thermal and security cover requirements, additional information on actual moose use of different wetland types and their associated forest buffers is required. The CCLUP suggests a 200 m buffer on the perimeter of important wetlands may be required on key wetland and riparian habitats. To aid in determining an appropriate buffer width on the perimeter of key wetlands, ten GPS collars will be placed on moose in the SBPS and SBS zones, east of Williams Lake, in December 2000. Additional GPS collars may be placed on moose in 2001 to increase the sample size. Approximately four fixes (locations) per day will be obtained on each animal's location by way of satellites over a two-year period. The data stored in each collar will be used to track moose locations and movements. This level of detail will enable criteria to be developed on moose use patterns in relation to wetlands and to help describe appropriate buffer widths around wetlands and riparian areas. This is a co-operative working project between Weldwood (100 Mile House and Williams Lake Divisions) and MELP.

To further complement the wetland classification and GPS collar collection information, ongoing annual moose inventories are recommended, especially in areas where wetland classification has occurred. This component is an important part to the overall program because moose use of various wetlands will vary annually as a result of winter snow depths and temperature. The inventory information will aid in identifying areas of high moose concentrations and their association to wetlands in the area.

B. Use of New Knowledge

Monitoring moose use of wetland and riparian buffers will aid in developing forest harvesting techniques within and adjacent to forested buffers. This information will be provided to forest companies to incorporate into their forest harvest development planning.

C. Relationship to Sustainable Forest Management

There is limited information on the specific habitat selection patterns of moose in the Cariboo Region, particularly in regard to wetland and riparian habitats. The combination of wetland classification, GPS data collection and inventory will aid in developing forest harvest management strategies for maintaining moose numbers in areas of high wetland occurrence. The inventory data collected in this program will provide information to forest companies for helping to incorporate moose habitat requirements and wetland buffer distances into their forest harvest management plans, where this is appropriate.

D. Use of Improved Knowledge

The information collected from this program will provide resource managers with the most current information on the habitat attributes and movement patterns of moose. It will enable appropriate forest harvest management techniques to be developed in critical areas to ensure thermal and security cover requirements are achieved. Over the long term, the co-operative working venture and the development of forest harvest management techniques for moose will ensure long-term sustainability of the population and help meet CCLUP requirements for moose.

E. Challenges and Constraints

There may be limitations for obtaining moose locations in dense overhead forest canopies. The extent of this problem will be determined by testing collars in various canopy densities. On-ground animal trailing data will also be collected in order to address this GPS collar limitation. GPS telemetry technology is very expensive but provides information that conventional VHF radio-collars cannot.

Knowledge Gaps

F. Existing Information

Aerial inventory population data are available for most areas inhabited by moose in the Cariboo Region but it is not up-to-date. Wetlands have been classified on approximately 20-1:20,000 map sheets in various locations throughout the region and these areas have been inventoried during the past 5 years. Preliminary radio-telemetry work has indicated that wetlands are very key habitats for moose in the Cariboo-Chilcotin.

G. Knowledge Gap

Information is lacking on moose perimeter use of wetlands and riparian areas, thermal and security cover requirements, calving site selection and the association of moose use to the various types of wetlands. The impact of forest harvesting on moose use of wetlands is not clearly understood, nor are the requirements for forested buffers.

Proposed Project

H. Project Description

- Priority #1: Monitor, by way of GPS collars and winter trailing, moose habitat selection and movement patterns in relation to wetlands for two years (a minimum of two winters of data is required). (Note: If supplemental collars are put on in Dec. 2001 then it will be the wisest expenditure of money to conduct radio telemetry on those collared animals until the collar batteries expire (approximate life is one year) – project end date of March 2003). Based on this inventory work, co-operatively develop appropriate forest harvest management techniques with forest harvesting companies to ensure long term sustainability of moose populations in appropriate areas.
- Priority #2: Continue updating wetland classification mapping in select areas. Develop criteria to identify wetland and riparian habitats important to moose, especially during the winter period.
- Priority #3: Conduct aerial inventories in select areas to assess population parameters.

I. Function

The overall project will provide a baseline understanding of moose population and habitat use patterns and aid in development of forest harvesting management practices applicable to moose.

J. Sustainable Forest Management

Development of moose-forest harvest management strategies to ensure sustainable forest management in areas where moose population sustainability is a management priority.

K. Location

The wetland classification and aerial inventory are regional in scope and application. GPS collar data collection will occur in the vicinity of McIntosh Lakes (approximately 60 km east of Williams Lake).

L. Timeframe

Ongoing.

M. Benefits

Implementation of the CCLUP requirements for moose. Co-operative working venture between government and industry.

N. Performance Indicators

Annual GPS collar data progress reports, annual aerial inventory reports and completed 1:20,000 classified wetland maps. A project completion report will have forest management recommendations in regard to moose and non-forested openings that will be a useful tool for forest management planning.

O. Cost

Project	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
GPS Wetlands	$68,000	$100,000	$100,000			$268,000
Map Wetlands	$75,000	$30,000	$30,000			$135,000
Moose Surveys	$50,000	$30,000	$30,000			$110,000
Total	**$193,000**	**$160,000**	**$160,000**			**$513,000**

Number	**SSFM-18**
Title	**Riske Creek Cavity Nesting Waterfowl Habitat Study**
Proponent	**Graeme McIntosh, West Fraser Timber**

Description of Issue

A. Overview
The project will identify wetland capability and frequency of usage by selected cavity nesting waterfowl in the Riske Creek/Bechers Prairie area.

B. Use of New Knowledge
The project will aid in identifying wetland habitat capability for waterfowl in excess of FPC riparian requirements.

C. Relationship to Sustainable Forest Management
Smaller isolated wetlands are important in maintaining migratory bird populations in the Chilcotin. The nesting habitat suitability is a critical component in maintaining populations.

D. Use of Improved Knowledge
The project will aid in identifying higher quality wetlands which could be assessed to determine appropriate harvest practices to maintain habitat quality.

E. Challenges and Constraints
The study focuses on selected species of waterfowl and nesting habits; however, due to the importance of wetlands in the ecological balance of this area, it could be interpreted to represent a habitat quality assessment for a wide range of species.

Knowledge Gaps

F. Existing Information
MINIMAL.

G. Knowledge Gap
Minimal information currently exists on cavity nesting habitats and associated attributes.

Proposed Project

H. Project Description
Assessing wetlands quality and recording incidence and site location characteristics of cavity nesting sites.

I. Function
The project will provide information useful in identifying higher quality wetlands with increased potential for cavity nesting habitat.

J. Sustainable Forest Management
The study relates to the identification of habitat attributes in the timber/wetland interface critical in maintaining bird populations in Chilcotin area.

K. Location
Riske Creek, Bechers Prairie

L. Timeframe

2001-2003.

M. Benefits

As indicated above.

N. Performance Indicators

Recording of wetland quality and nesting locations.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
nil	$5,000	$5,000	$5,000			$15,000

Number SSFM-20
Title Fish and Fish Habitat Inventory Program
Proponent Chris Nowotny, Biofor Resource Consulting, Williams Lake for Quesnel Licensees

Description of Issue

A. Overview

This document has been prepared on behalf of the Quesnel divisions of Slocan Forest Products Ltd., Tolko Industries Ltd., Weldwood of Canada Ltd., and West Fraser Mills Ltd. Its intent is to provide supporting rationale to the SSFM Planning Team for recommending the continued FRBC funding of the Fish and Fish Habitat Inventory Program within the Quesnel Forest District.

The program provides important information about fish habitats as well as the presence and absence of fish species and their distributions. The fish and fish habitat inventory (FFHI) procedure was designed for large areas, generally at the watershed level. At times, however, they are conducted over smaller or trans-watershed areas (sub-basins within watersheds) to coincide with planning units such as TFL and other operating area boundaries.

This project is a component of SSFM #49 *Reconnaisance 1:20,000 Fish Inventory.* The cost is included in the total cost of #49.

B. Use of New Knowledge

New knowledge from FFHIs comes in several forms; the most obvious being stream (reach) classifications. Others include: fish species presence/absence (including the blue-listed bull trout and chiselmouth chub), fish distribution limits, locations of critical habitats for blue-listed species, and potential recreational fishery values of lakes.

Opportunities for using new knowledge are as follows:

1. *Facilitate regional and sub-regional planning:* Delineation and quantification of areas taken up by riparian reserve zones is integral to higher level planning initiatives, such as Landscape Unit Planning, and the CCLUP.
2. *Facilitate the Timber Supply Review Process* – will allow for more accurate netdowns (reserves taken out of AAC; RMZ taken out as a factor i.e. 50%):
3. *Facilitate blue-listed species management* through provisions of the Identified Wildlife Management Strategy.
4. *Facilitate the Lake Classification Process,* a responsibility shared by MOF and MELP.
5. *Facilitate the management of commercial and recreational species* by identifying locations of limiting habitats such as overwintering, staging and spawning.

C. Relationship to Sustainable Forest Management:

Sustainable forest management requires that as much information about the state of the forests resources is available to guide appropriate resource management decisions. In relation to regional and sub-regional planning, FFHIs provide information that allows managers to more accurately determine how much timber over the productive forest landscape is tied up in riparian reserve and management zones, and allow for coordination with Landscape Unit Planning Initiatives including establishment of OGMAs, FENs and WTPs.

Similarly, the Timber Supply Review process requires the Chief Forester to have as much information about the variety of forest resources so that he may make the informed determination of an AAC that is expected. Resource values, such as the presence of blue-listed species and their critical habitats, extent of riparian habitat, lake fisheries and their value to recreation, have bearing on the Chief Forester's determination.

The inventory program provides information critical to the management and conservation of blue-listed species. The Identified Wildlife Management Strategy provides for this management and conservation; however, without adequate inventory data, provisions of the strategy, such as conservation assessments, establishment of wildlife habitat areas and population monitoring cannot be carried out.

Lakes Classification occurs at the District level and is a shared responsibility of MOF and MELP. The process relies on the knowledge of three key lake attributes, each of which is at least partially addressed through lake surveys conducted during inventories. These attributes are: fishery potential, wildlife and biodiversity, and recreational and visual quality.

Management of commercial and recreational fish species, as well as blue-listed species, relies on knowledge of locations and extent of limiting habitats, limits to fish distribution, and species presence.

D. Use of Improved Knowledge

- Landscape unit planning (establishment of FENs, OGMAs and WTPs)
- Improve the accuracy of netdowns and allow for the identification of constrained areas to facilitate the TSR3 and CCLUP processes.

E. Challenges and Constraints

Knowledge Gaps

F. Existing Information

Fish and Fish Habitat Inventories have been conducted on selected watersheds throughout the Quesnel Forest District for a number of years. West Fraser Mills Ltd. initiated them on their TFL (52) in 1995. Since 1998, the inventories have been carried out as a coordinated effort involving Slocan, Tolko and Weldwood, with West Fraser joining in 2000. By the end of the 2000/2001 fiscal year, between one-third and one-half of the Forest District will have been inventoried, including most of TFLs 52 and 5. A minor amount of additional fish presence information exists sporadically through the district and is documented in a variety of reports and maps.

G. Knowledge Gap

Knowledge Gaps exist in two forms: 1) Numerous watersheds in the District have not been inventoried and consequently lack any meaningful information about fish presence, species diversity, and distributions. 2) Inventories only provide for the sampling of selected stream reaches, and therefore, within inventoried watersheds, fish information for some streams is inferred from the nearest available information and the characteristics of the particular streams.

Proposed Projects

H. Project Description

Fish and fish habitat inventories will continue on a watershed-by-watershed basis until the goal of inventorying the entire Forest District is achieved. The work is contracted to qualified fisheries consulting firms.

I. Function

Once a watershed is inventoried, planning is facilitated through the availability of the information provided. In an area where a number of watersheds comprising a potential landscape unit have been inventoried, the fishery resource values, areas of reserve and management zones, lake classifications, and the applicability of blue-listed species management can be fully incorporated into landscape unit planning.

J. Sustainable Forest Management

Without the available information that fish inventories provide, management decisions are either deferred or are made using a set of conservative assumptions. Neither is conducive to sustainable forest management and may, in fact, lend themselves to foreclosing options on the management and conservation of biodiversity.

K. Location

The inventory program is planned to cover the entire Forest District, one watershed at a time (between 5 and 10 per year, depending on size). With the proposed budgets presented below, the program is anticipated to meet this target within five years. In the western portion of the Forest District, priority in recent years has been given to watersheds heavily infected by mountain pine beetle.

Information obtained from the inventories will be used for watershed-wide planning initiatives including the establishment of Local Area Agreements between local stakeholders (forest companies, MOF and MELP). Wider application will extend to regional (CCLUP) and sub-regional planning initiatives and Landscape Unit Planning.

L. Timeframe

Four to five years of continued funding will likely be required to complete the inventory of the Forest District.

M. Benefits

- Stream Classifications will facilitate the achievement of higher level plan objectives and improve the confidence surrounding TSR3 annual allowable cut calculation.
- Knowledge of extent and locations of limiting fish habitat values will facilitate species management and conservation.
- Knowledge of limits to fish distribution.
- Facilitate the establishment of Local Area Agreements.

N. Performance Indicators

Proportion of Forest District inventoried at the end of the proposed program:

- Area of productive forest land adjacent to streams and lakes confirmed to be occupied in riparian reserves and management zones.
- Length and locations of streams for which Riparian Reserve and Management Zones have been designated.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$328,202	$412,370	$400,000	$400,00	$400,000	$400,000	$2,240,572

Note: Cost to Date does not include West Fraser Mills inventories of TFL 52 up to 1999 fiscal year end (WFM expenditures between 1995 and 1999 were approximately $350,000).

Number	**SSFM-21**
Title	**Sampling of Riparian Management Zones (Surrogate or Actual) to Refine SRP Modeling Inputs**
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview

Lack of adequate classification of streams, wetlands and lakes and the lack of an adequate forest inventory can result in an over- or under-estimation of the reserve zones (constrained area) associated with streams, wetlands and lakes, and limit a planner's ability to maximize overlaps with other non-timber resource values, such as OGMAs.

B. Use of New Knowledge

The new knowledge can be incorporated into Sub-Regional Planning and into TSR3 modeling of CCLUP and SRP constraints on the land base.

C. Relationship to Sustainable Forest Management

Long-term harvest rates can be more accurately determined.

D. Use of Improved Knowledge

Will allow for more accurate representation of Riparian/OGMA/WTP overlaps.

E. Challenges and Constraints

Public acceptance of long-term harvest levels.

Knowledge Gaps

F. Existing Information

Surrogate classification of Riparian Management Areas and zones.

Proposed Project

H. Project Description

Develop, test and implement a sampling process for inventory of forest attributes in riparian management zones, both surrogate and actual, to confirm or refine inputs to sub-regional planning and landscape unit plans. Significant analytical overlaps of non-timber values are assumed to occur in modeled riparian management zones across the region.

However, experience has shown that significant refinement of the overlap modeling assumptions is necessary, especially in the plateau areas of the region.

I. Function

This project will provide data that contributes to the refinement of the overlap modeling assumptions.

J. Sustainable Forest Management

Timber targets can be maintained.

K. Location

The project will be conducted throughout the entire Cariboo Forest Region.

L. Timeframe

One year.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the TSAs in the Cariboo Forest Region.

N. Performance Indicators

Sub-Regional Planning will better estimate RMZ/OGMA/WTP overlaps.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$50,000				$50,000

Number	**SSFM-22**
Title	**Digital Roll-Up Fish Inventory**
Proponent	**Tom Wilkinson, MELP**

Description of Issue

A. Overview

A substantial amount of fish and fish habitat inventory information has been provided in recent years through FRBC Operational Inventory, Fish Stream Classifications and other initiatives. In order to provide this data to various user groups, the information has to be rolled into databases, web sites and documents that are easily retrievable. In addition, various aspects of the data require interpretation, involving sophisticated models (eg. Fish Habitat Assessment Tool [FHAT]), before the information is useable for planning processes.

B. Use of New Knowledge

The new information will be used in a variety of ways. Reconnaissance 1:20,000 Fish and Fish Habitat inventory information has been collected according to rigorous RIC standards and entered into the Fish Data Information System (FDIS). The FHAT has been developed around the FDIS database to provide predicted watershed-wide fish distributions that can be used for various planning purposes. Of prime importance is the integration of this information into Local Area Agreements to reduce the amount of Fish Stream Identification work that has to be undertaken.

Digital map files, provided as part of 1:20,000 fish and fish habitat inventory, will be converted to government specifications and made available to staff (and other users) on Ministry GIS.

C. Knowledge Gaps

D. Existing Information

None of the Cariboo Region inventory has yet been run through the newly created model. FRBC funds will be used in late 2000/2001 to model the information from two Cariboo Region inventory projects.

Digital map information is presently being converted and loaded on Ministry GIS for use by fisheries planning staff. It is anticipated that digital map files will be available at some District offices, by March 2001, for use by Forest Ecosystem Specialists (MELP) and MOF staff.

Knowledge Gaps

F. Existing Information

Presently, over 40 inventories have been carried out to the standards required for use in the Fish Habitat Assessment Tool. None of the Cariboo Region inventory has yet been run through the newly created model. It is important that resources be made available so that inventory data can be integrated into FHAT.

G. Knowledge Gap

Digital maps for the fish inventory program are presently not available on Ministry GIS.

Proposed Project

H. Project Description

One encompassing project is planned for 2001/2002. This will involve a combination of contract work and auxiliary staff to collate information and prepare for use in FHAT and GIS.

I. Function

The roll-up of digital data required expertise in the specific areas of database management and GIS. Appropriate staff will be hired, trained and provided with resources to reach project objectives.

J. Sustainable Forest Management

This project will allow staff associated with forest planning initiatives to easily integrate fish inventory information. Fish information, modeled under FHAT, will form the basis for Local Area Agreements.

K. Location

This project will encompass information collected for the entire Cariboo Region.

L. Timeframe

The above listed project will be carried out over the next three years. Backlog of information will still be addressed in year 2001/02 and the final two years will deal with annual production of information.

M. Benefits

The Fish Habitat Assessment Tool has been developed around the FDIS database to provide predicted watershed-wide fish distributions that can be used for various planning purposes. Of prime importance is the integration of this information into Local Area Agreements to reduce the amount of Fish Stream Identification work that has to be undertaken.

Digital map files, provide as part of 1:20,000 fish and fish habitat inventory, will be converted to government specifications and made available to staff (and other users) on Ministry GIS.

N. Performance Indicators

Production of map themes, outlining spatial data, on MOF and MELP GIS. Integration of the fish information onto the FHAT model and subsequently used in Local Area Agreements.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
	0	$40,000	$30,000	$20,000		$90,000

Number SSFM-23A and 23B
Title Intensive Fish Inventory
Proponent Tom Wilkinson, MELP

Description of Issue

A. Overview

Intensive-level inventories are required to address priorities of the CCLUP and the Regional Fisheries Branch. These will be primarily carried out by MELP but forest companies are encouraged to also conduct intensive studies to ensure that concerns about species-specific fish populations are addressed.

B. Use of New Knowledge

Primarily this information will be used to provide information on specific fish populations in areas where forest harvesting is underway or planned. The Fish and Wildlife Branch must have funding to carryout this project in order to provide specific guidelines for forest development planning to protect species (kokanee, bull trout) where forest harvesting may cause specific fish habitat degradation problems

Knowledge Gaps

F. Existing Information

- Quesnel Lake kokanee were inventoried in the early 1980's.
- Intensive studies on bull trout in the Cariboo Region have only been carried out on stocks in the upper Chilko River/Lake area. Weldwood is undertaking a directed study on bull trout in a tributary of Little River in 2000.

G. Knowledge Gap

- Information on temperature sensitive streams, specific spawning times and locations (life history), numbers of fish, habitat condition.
-

Proposed Projects

23A. Kokanee Inventory

H. Project Description

Kokanee use both river and shoal areas for spawning in the Quesnel Lake watershed. These spawning areas are very susceptible to degradation resulting from development of the adjacent land base. Inventory of the adults using the various spawning areas has not been carried out in recent years and has never had an extensive study undertaken.

Quesnel Lake kokanee will be inventoried at the juvenile stage by echo sounding, trawls and DNA work. Spawning areas used by kokanee adults will be carried out by aerial counts, boat reconnaissance and dive studies. RIC standards will be adhered to where available.

I. Function

Inventory information from the above project areas will provide important fish and fish habitat information on the kokanee in the Cariboo Region.

J. Sustainable Forest Management

Intensive fish inventory will provide information to develop measures to protect sensitive fish stocks, not only within the Quesnel Lake drainage but also in other large lake drainages within the region.

K. Location
Kokanee inventory will be carried out within Quesnel Lake, as well as the major tributary streams such as the Horsefly and Mitchell Rivers.

L. Timeframe
The Quesnel Lake kokanee study will be carried out over the next two years until March 31, 2003.

M. Benefits
Inventory information from the above project areas will provide important fish and fish habitat information on the high priority species in the Cariboo Region.

N. Performance Indicators
Production of individual reports outlining data collected and recommendations to be included for future forest development in the specified project areas. Integration of the general information collected and the integration of the information into regional and area-specific planning processes.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$75,000	$50,000	0	0	$125,000

23B. Bull Trout Inventory

H. Project Description
Bull trout are sensitive to changes in their habitat, especially in relation to increases in stream temperatures. In order to better understand the life history and habitat requirements of bull trout in the Cariboo region, studies will be carried out on several watersheds: Cariboo River, Cottonwood River and Blackwater River.

Studies will be set using RIC standards and will include spawner timings, rearing areas, size and age, etc. A radio tagging program will be set up on one of the watersheds to record specific movements of adults during the spawning season. Habitat parameters will be identified and specific information of stream temperatures will be collected.

This information will build on information being collected by Weldwood within the Cariboo watershed (Tuckett Creek).

I. Function
Inventory information from the above project areas will provide important fish and fish habitat information on bull trout within specific drainages as well as in the Cariboo Region.

J. Sustainable Forest Management
Intensive fish inventory will provide information to develop measures to protect sensitive fish stocks on a regional basis.

K. Locations
Bull trout studies will be carried out in the Tuckett (Little River) under a study initiated in 2000/2001 by Weldwood. Watersheds under consideration for the expanded study include the Cariboo River system, Cottonwood Watershed and the Blackwater River.

L. Timeframe
The above listed project will be carried out over the next three years, depending on funding allocation.

M. Benefits
Inventory information from the above project areas will provide important fish and fish habitat information on the high priority species in the Cariboo Region.

N. Performance Indicators

Production of individual reports outlining data collected and recommendations to be included for future forest development in the specified project areas. Integration of the general information collected and the integration of the information into regional planning processes.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$150,000	$150,000	$150,000		$450,000

Number	**SSFM-24A, 24B and 24C**
Title	**Lakes Inventory and Classification**
Proponent	**Tom Wilkinson, MELP**

Description of Issue

A. Overview

There are approximately 3280 lakes within the Cariboo Forest Region (MELP Region 5 portion) that are greater than 5 ha. In addition to providing important fish habitat, many of these lakes are valuable for recreation. Knowing the fish habitat importance and understanding the recreational significance of lakes are the main objectives of the Lakes Inventory program. Some of the required lakes inventory information will be collected during 1:20,000 watershed-wide lake and stream inventory; however, most forest companies are opting out of lakes inventory and MELP will have to address the problem. Key lakes outside of forest company priority watersheds must be inventoried to provide information for Lakes Classification Committees and provide baseline information to support recreational management and other identified objectives of land use planning. Information from winter oxygen testing of lakes is required for planning of full reconnaissance-level inventory as well as integration into the Lakes Classification process.

Staff are required analyze and provide fisheries information for the lakes classification process.

B. Use of New Knowledge

Primarily this information will be used to provide information on lake fish populations in areas where forest harvesting is underway or planned. Various planning processes will require the information in order to address concerns about both anadromous and non-anadromous fish stocks using the lakes. The Lakes Classification process will provide lakeshore management guidelines on a District-wide basis.

C. Relationship to Sustainable Forest Management

Watershed-wide information on fish stocks will allow forest planning to include measures to protect fish stocks. This will reduce the impact of having to implement special measures to protect fish stocks at the operational level.

Watershed fish presence information will reduce the use of default fish-bearing status, potentially allowing additional harvesting of areas near streams.

E. Challenges and Constraints

Information provided through this project will require staff to integrate information into various planning processes.

Knowledge Gaps

F. Existing Information

- Approximately 300 lakes have been inventoried in the Cariboo Forest region.
- Winter limnologies have been carried out on over 80% of the lakes in the Cariboo region.
- Fisheries information is being integrated into the Lakes Classification processes in two of the five Forest Districts with the other three Districts expected in the near future.

G. Knowledge Gap

- Several hundred key lakes, as well as a number of lower priority waterbodies, still require inventory.
- Fish and fish habitat information is critical to planning processes including Lakes Classification, Sub Regional Plans and Local Area Agreements.
- Lake inventory is required to address non-anadromous, and sometimes unique, stocks.
- Winter limnologies are needed for lakes classification and planning of higher level lakes surveys.

Proposed Projects

24A. Lakes Inventory

H. Project Description

Lakes inventory will continue at a rate of 30 lakes per year to address the important lakes in the next 5 to 10 years. MELP will provide the key role in determining the lakes to be inventoried and will contract out the work. Information will be collected to RIC standards. Information from the surveys will be integrated into regional and provincial databases, and interpreted information will be provided to the Lakes Classification Committee.

I. Function

Lake inventories will provide the information required for determining sensitive fish habitats, recreational fisheries management options, and classification of lakes and lakeshores.

J. Sustainable Forest Management

Lake inventory information on fish stocks will allow forest planning to include measures to protect fish stocks and sport fisheries. This will reduce the impact of having to implement special measures to protect fish stocks at the operational level.

K. Locations

Lake inventory is required Region-wide.

L. Timeframe

The lake inventory component of this project must be continued for the next ten years to address the number of lakes still requiring inventory.

M. Benefits

The main benefit of lake inventory is being able to provide protective measures for fish populations and sport fisheries during the early stages of forest management planning. Forest companies will eventually see reduced operational costs as a result of long-term planning.

N. Performance Indicators

Production of lake inventory reports, integration of information into the regional and provincial databases, making information available to various sources and the integration of the information into watershed forest planning through the lake classification process

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$200,000	$200,000	$200,000	$200,000	$800,000

24B. Winter Limnologies

H. Project Description

Winter limnologies will be carried out on 75 to 100 lakes in the Cariboo Region to determine the capability of selected waterbodies to support fish through the period of winter ice-over. The work will be carried out by MELP staff during the period of lowest oxygen concentrations (early to mid March). Information will be collected, analyzed and integrated into the Cariboo Region Winter O2 Database. Interpreted information from the database will be provided to Lakes Classification Committees and used for planning future 1:20,000 lake inventory. RIC standards will be adhered to throughout the project.

I. Function

Interpreted information from the database will be provided to Lakes Classification Committees and used for planning future 1:20,000 lake inventory. RIC standards will be adhered to throughout the project.

J. Sustainable Forest Management

Winter limnology information on fish stocks will allow lakes classification to include measures to protect fish stocks and sport fisheries. It will also allow for the identification of lakes that show low capability to sustain fish stocks. These lakes may not require special lakeshore management prescriptions required by Lakes Classification guidebooks.

K. Locations

Winter limnology will be conducted on 75 to 100 lakes spread out over the entire Cariboo Region.

L. Timeframe

The work will be carried out by MELP staff during the period of lowest oxygen concentrations (early to mid March). It is anticipated that winter limnology surveys will be required over the next 1 to 3 years to complete the regional database.

M. Benefits

Winter limnologies provide information that can be used for identifying high capability lakes, and especially those that require a more intensive survey in order to identify potential fish production and protection prescriptions. Information on fish capability related to oxygen levels can also be used as important parameter during the Lakes Classification process.

N. Performance Indicators

Production of an annual winter oxygen report and the addition of the information to the Cariboo Winter Oxygen database. Integration of the capability estimation into the Lakes Classification process and other watershed forest planning initiatives.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$15,000	$15,000	$15,000	$10,000	$55,000

24C. Lakes Classification

H. Project Description

A key component of the Lakes Classification process is the integration of fish and fish habitat data. Information on the lakes' capability to produce fish, fish and fish habitat data, and recreational use will be provided by MELP to the Lakes Classification Committees.

I. Function

This project will provide the staff support for the MELP component of the Lakes Classification Committee. Staff will be responsible for providing key information related to fish and fish habitat data.

J. Sustainable Forest Management

Lakes Classification is an important process for identifying lakes that require special protection from forest development.

K. Locations

Lake Classification processes are presently under way in the Williams Lake and 100 Mile Forest Districts. Additional processes are expected to be carried out in the other three Districts.

L. Timeframe

MELP's involvement will be required on the Lakes Classification committee on an on-going basis.

M. Benefits

The integration of fish information into the Lakes Classification process will ensure that protection measures provided for under CCLUP and the Forest Practices Code are implemented. It will allow for long-term planning of areas adjacent to lakes so that forest companies can identify both those areas that require special protection measures and those that do not.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$50,000	$50,000	$50,000	$50,000	$200,000

Number	**SSFM-25**
Title	**New Water Monitoring Station on Deception Creek**
Proponent	**Val Duffin, Weldwood, 100 Mile**

Description of Issue

A. Overview

The watershed has only had limited harvesting to date in the lower reaches. There is a considerable amount of logging planned once salvage work in 100 Mile Forest District is completed. A monitoring station now would permit the collection of two or three years of baseline data before the new blocks are harvested. The project outlines the collection of data on water quality and quantity in the Deception Creek watershed.

B. Use of New Knowledge

The CCLUP Integration Report links Equivalent Clearcut Area (ECA) and hydrologic recovery to the fisheries risk assessment. Under CSA certification of Sustainable Forest Management, water resources are considered a critical element. The values of water quality and quantity are listed and one of the indicators proposed is a water monitoring system. Weldwood would like to investigate and establish a cost-effective water monitoring system.

C. Relationship to Sustainable Forest Management

The project could clarify whether ECA is an appropriate indicator for water quality and quantity.

D. Use of Improved Knowledge

Water quality and quantity are issues that the Weldwood local consultative committee would like investigated.

E. Challenges and Constraints

The issue needs long-term commitment to build up a significant bank of data. However, the proposed project is only directly applicable to the Deception Creek watershed.

Knowledge Gaps

F. Existing Information

G. Knowledge Gap

Proposed Project

H. Project Description

Work with MELP to investigate cost-effective water monitoring options and establish a water monitoring station on Deception Creek. Exact details still to be determined. Examine cost-effective options before selecting equipment.

I. Function

The project will provide data on water quality and quantity before, during and after more logging takes place in the watershed.

J. Sustainable Forest Management

This project may show whether the ECA values are correct and could have an effect on potential timber access. It is of interest to the public and could help to demonstrate effects of logging on water quality and quantity.

K. Location

There are two potential sites for a water monitoring station. The results obtained would become part of a data bank of information which, although only directly applicable to this watershed, any trends can be applied to other similar watersheds.

L. Timeframe

Ongoing indefinitely once installed.

M. Benefits

Knowledge of what has happened.

N. Performance Indicators

Performance indicators not yet decided, but one may be cost versus information compared to other monitoring stations.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$30,000	$10,000	$10,000	$10,000	$60,000

Number	**SSFM-26**
Title	**Horsefly River Sediment Monitoring**
Proponent	**Pat Teti, MOF Research**

Description of Issue

A. Overview

The Horsefly River and its tributaries contain some of the most important fish habitat in the Fraser River system. This includes species of high economic value, such as sockeye salmon and rainbow trout, as well as those which are precious due to vulnerable local populations, such as coho and chinook salmon. According to MELP, the Quesnel Lake sport fishery is solely dependant on maintenance of a rainbow trout population which, in turn, is almost entirely dependent on the Horsefly River. Economically, the Horsefly River is most important for providing sockeye spawning and rearing habitat. The dominant sockeye run in 1993 comprised 51% of Fraser River sockeye production and yielded a catch worth 68 million dollars (Fisheries and Oceans file data).

The Horsefly watershed is also important to agriculture, mining and the forest industry. Forest licensees and the MOF Small Business Program currently harvest approximately 425,000 m^3 from the drainage annually. These activities can increase surface erosion and the introduction of sediment into stream channels to the detriment of fish habitat.

In 1993, proposed road building and timber harvesting in the upper part of the watershed prompted the resource management agencies and forest licensees to commit to a program of watershed assessment and monitoring. One of the results has been suspended sediment sampling at a number of locations through the spring and summer of every year since 1994. Funding for this program has been provided by forest licensees. The purpose of this proposal is to secure and consolidate a funding source to ensure the continuation of this program.

The objectives are to:

1. Characterize suspended sediment concentrations at various locations in the Horsefly River drainage under the current and future land use conditions in the watershed;
2. Provide some discrimination of the above with respect to natural, harvested, and agricultural areas; and
3. Establish a baseline to enable the detection of future changes in sediment concentrations.

The geographical scope is the Horsefly watershed, upstream from the town of Horsefly. There will be six sampling locations on the Horsefly River, as well as sites on Moffat Creek, McKinley Creek and McKusky Creek.

B. Use of New Knowledge

Knowledge from this monitoring program will allow managers to make more rational decisions about whether fisheries values are being adequately protected, as directed by the CCLUP. According to the CCLUP Integration Report, "a watershed monitoring program is recommended for high value fisheries streams such as the Horsefly River." This monitoring program will add a specific increment of new knowledge with every calendar year.

C. Relationship to Sustainable Forest Management

Federal and provincial fisheries agencies consider continued sediment monitoring in the Horsefly River to be essential for responsible management.

D. Use of Improved Knowledge

Same as described under B. Use of New Knowledge, above.

E. Challenges and Constraints

Unlike a scientific experiment, this monitoring program is expected to provide useful, but not necessarily definitive, information. It will reflect a combination of natural and disturbed processes, and professional interpretation is required.

Knowledge Gaps

F. Existing Information

Previous suspended sediment data (1994 – 2000), watershed assessments by consultants and agencies, sediment source mapping and terrain stability mapping.

G. Knowledge Gap

Suspended sediment varies unpredictably from year to year in response to natural and human factors. The knowledge gap is our incomplete knowledge of both sets of factors. Observation and monitoring is the answer.

Proposed Project

H. Project Description

The monitoring program consists of periodic sampling, analysis, reporting and data management of water samples and suspended sediment data at six stations on the Horsefly River and five stations on tributaries.

I. Function

Using widely recognized procedures, this program provides representative suspended sediment data through the spring and summer at the specified sites.

J. Sustainable Forest Management

The monitoring program satisfies a need that has been stated by the federal and provincial fisheries agencies.

K. Location

All monitoring will take place in the Horsefly River and its tributaries upstream from the town of Horsefly. The results are expected to be most significant locally.

L. Timeframe

Seasonal duration is March through September. The lifetime of the monitoring program is indefinite. Ten years is proposed herein.

M. Benefits

Knowledge from this monitoring program will allow managers to make more rational decisions about whether fisheries values are being adequately protected as directed by the CCLUP. It will partially satisfy the recommendation in the CCLUP Integration Report for a watershed monitoring program in the Horsefly River.

N. Performance Indicators

- Satisfactory completion of water sampling by a contractor.
- Satisfactory analysis and reporting of suspended sediment data by the laboratory.
- Satisfactory compilation and reporting of the data to the Horsefly Watershed Monitoring Committee.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$111,280		$12,000	$12,000	$12,000	$12,000	$159,280

Number	**SSFM-27**
Title	**Quesnel Lake North Arm Water Quality and Quantity Inventory Project at Penfold Creek**
Proponent	**Graeme McIntosh, West Fraser Timber**

Description of Issue

A. Overview
Monitor harvesting impact on the Penfold Creek drainage.

B. Use of New Knowledge
Update knowledge and information base for water management options related to harvesting activities.

C. Relationship to Sustainable Forest Management
Maintenance of water quality and quantity is essential during forest management operations, to retain riparian habitat values and watershed integrity.

D. Use of Improved Knowledge
Monitoring of water quality and quantity in response to operational forestry will provide important information to aid in identifying appropriate future road development and harvesting options.

E. Challenges and Constraints
The study is focussed on a small and isolated drainage, with little forestry operational history. It will determine if the results of studies are transferable to other more developed drainage areas.

Knowledge Gaps

F. Existing Information
In 2001 the project will have a two-year history. Continued research will build on that knowledge base.

G. Knowledge Gap
Minimal information exists for previously undeveloped drainages, which follows thru time the hydrologic impacts of ongoing operational forestry activities.

Proposed Project

H. Project Description
Monitoring of seasonal flow rates of Penfold Creek and selected tributary drainages, along with the sedimentation (type and amount) occurring in these drainages which have been subject to harvesting activities.

I. Function
Will provide a continuum of information on the hydrologic impacts of harvesting in a previously undeveloped watershed.

J. Sustainable Forest Management
Maintenance of water quality and quantity an essential component of forest management.

K. Location
Penfold Creek, north arm of Quesnel Lake.

L. Timeframe
2001-2003.

M. Benefits

As indicated above.

N. Performance Indicators

Sedimentation levels and types identified through bucket sampling.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$50,000	$90,000*	$60,000	$50,000	$30,000		

* 2000 budget

Number **SSFM-28**
Title **Cariboo Region Automated Water Quality and Quantity Monitoring Network**
Proponent **Julia Brooke, MELP**

DESCRIPTION OF ISSUE

A. OVERVIEW

A water quality and quantity automated monitoring program was implemented in 1998 to address regional information deficiencies outlined in the March 1998 Needs/Gap Analysis Reports for the MELP Cariboo Region: Hydrometric/Climate Network and Community Watershed Water Quality Monitoring Plan prepared by Klohn-Crippen Consultants Ltd.

Deficiencies in the hydrometric/water quality monitoring network in the Cariboo region can result in the use of erroneous hydrometric parameters by timber licensees. This can result in environmental degradation or contravention of MELP's water quality objectives.

In recognition of resource limitations for water quality monitoring in the hydrologically diverse Cariboo region, MELP has prioritized watersheds and placed key hydrometric/water quality stations in catchments of potential Community Watersheds and in actively harvested, high value fisheries streams. These priorities were based on the $200,000 FRBC-funded Needs/Gap Analysis referred to above.

B. Use of New Knowledge

A comprehensive regional water quantity/quality network is required in support of the Water Management Strategy under the CCLUP, to meet FRBC objectives and to address SFM issues as follows:

CCLUP Water Management Strategy

The CCLUP states that "A comprehensive water management strategy is required in the Cariboo region." To develop this strategy requires an assessment of watersheds with respect to water conservation (allocations) and water quality. Key or sensitive watersheds should be selected for intensive research/monitoring to assess hydrologic and water quality impacts of logging.

FRBC Objectives

- To enable timber licensees to meet legal obligations for designing roads, culverts, and steam crossings;
- To provide baseline data for use in research of watershed system behavior under natural and timber harvesting conditions in the various ecosystems throughout the region;
- To enable the Ministry to develop water quality objectives for streams in Community Watersheds and streams with high fisheries value;
- To support operational, strategic, and landscape level forest planning as well as watershed restoration planning and evaluation.

SFM Issues

The network will serve to address Sustainable Forest Management issues related to both the maintenance of environmental values and the sustainability of non-timber resources. It will reduce the uncertainty regarding water quality and quantity in high priority watersheds.

C. Relationship to Sustainable Forest Management

Uncertainties associated with inadequate water quantity/quality monitoring could have significant impacts on sensitive or high value fisheries streams and/or community watersheds. Impacts may be related to altered stream flows (quantity/timing of peak and low flows) and water quality degradation affecting fish and/or fish habitat, such as increased sedimentation and/or temperature changes. In addition to this, monitoring of key streams will aid in water resource allocation and watershed management planning decisions.

D. Use of Improved Knowledge

Data from the automated water quantity/quality network will provide the necessary information to assess the risks to priority streams in the region. Certainty will be provided to licensees and MELP regarding impacts to water quality/quantity as a result of forest harvesting activities and other land uses in key watersheds. The information may also be used to address stakeholder concerns associated with land use issues in key watersheds.

E. Challenges and Constraints

Although it is desirable to obtain pre and post harvesting activity information in a watershed, this is often not possible. Regardless of whether or not pre-harvesting water quality and quantity information is available, valuable trend and temporal information can be obtained that is useful in identifying both long and short term watershed responses to various activities and events within the watershed.

Knowledge Gaps

F. Existing Information

The data gathered by the four automated stations currently installed provides a continuous record of water quality and quantity information since 1998 for two stations and 1999 for an additional two stations. Discrete (i.e. infrequent, point-in-time grab sampling) water quality monitoring data and minimal historical flow data are also available for some of these watersheds. Essentially, the historical information (where it does exist for Bridge Creek, Judson Creek and Sheridan Creek) consists of infrequent "spot-checks" and does not provide a continuous record. With automated, continuous monitoring it is possible to capture extreme events and overall seasonal fluctuations, which provides essential information for the interpretation of watershed behavior and response.

G. Knowledge Gap

To date, the Cariboo region is very under-represented in terms of hydrometric and water quality stations to monitor watersheds as identified in the Needs/Gap Analysis done in 1998. The current network of four stations and a planned fifth station reflects only a small proportion of the more than 45 stations recommended for the collection of hydrometric, water quality and/or climate data in the Needs/Gap Analysis report.

Proposed Project

H. Project Description

A network of five automated water quality/quantity monitoring stations will be operated in the Cariboo region, continuing a program of data collection initiated in 1998. These stations are located on Bridge Creek upstream of Horse Lake, Sheridan Creek upstream of McLeese Lake, Windy Creek upstream of Jim Creek and Bowers Lake, Judson Creek upstream of Bridge Creek, and Dash Creek upstream of Churn Creek. These stations monitor the following parameters on a continuous basis: turbidity, pH, temperature, conductivity, water level and precipitation.

Priority locations were chosen on the basis of cost and site accessibility, fisheries values, community watershed values, and in an effort to obtain information from a cross section of hydrologic zones in the region. To date there has been an investment of approximately $560,000 of FRBC funding. Continued funding to support annual operating costs of the network stations is detailed in the cost table below.

I. Function

The project will gather data critical to assessing the risks associated with water quality/quantity (i.e. degradation of water quality and alteration of flows and their timing) and potential impacts on fish and fish habitat in priority watersheds in the region.

J. Sustainable Forest Management

Uncertainties associated with inadequate water quantity/quality monitoring could have significant impacts on sensitive or high value fisheries streams and/or community watersheds, both in terms of altered stream flow impacts and water quality degradation. In addition to this, monitoring of key streams will aid in water resource allocation and watershed management planning decisions. The project is relevant to sustainable forest management in that indicators will be provided for the maintenance of environmental values and non-timber resource values associated with water quality, fish habitat and water quantity/allocation. The need for this information can be directly linked to decision-making processes for operational, strategic and landscape level forest planning as well as watershed restoration planning and evaluation.

K. Location

Stations are distributed across the Cariboo region from locations east of 100 Mile House in the Bowers Lake watershed, to the north at McLeese Lake and to the west at Dash Creek upstream of Churn Creek adjacent to the Churn Creek protected area. Broad application to resource management planning can be expected given the attempt to provide information across a spectrum of hydrologic zones of the Cariboo Region.

L. Timeframe

A period of five years (or more) is desirable to obtain the most useful record to monitor trends, determine natural variability in hydrometric, chemical and physical parameters and/or to evaluate stream changes associated with forest harvesting or other land use activities. However, useful information regarding water quality, as indicated by comparison of data to established BC water quality criteria, and stream flow, can be used immediately upon collection. Watershed response to extreme events (natural or induced) can also be captured by automated monitoring on an immediate basis in relation to the timing of the occurrence.

M. Benefits

The project will provide the following benefits:

- Provide monitoring data for key or sensitive watersheds to assess hydrologic and water quality impacts of forest harvesting activities;
- Enable timber licensees to meet legal obligations for designing roads, culverts, and stream crossings;
- Provide baseline data for use in research of watershed system behavior under natural and timber harvesting conditions in the various ecosystems throughout the region;
- Enable the Ministry to develop water quality objectives for streams in Community Watersheds and streams with high fisheries value;
- Support operational, strategic, and landscape level forest planning as well as watershed restoration planning and evaluation.
- Address sustainable forest management issues related to both the maintenance of environmental values and the sustainability of non-timber resources.

N. Performance Indicators

- Evaluation of database with respect to established data quality objectives.
- Data analysis and interpretation.
- Preparation of data summary reports for each water quality/quantity station.
- Ease of incorporation of data to local/regional planning processes, MELP and licensees with respect to Timber Supply Reviews, Watershed Assessments, TFL Management Plans, Forest Development Plans, etc.
- Degree to which data can be used to facilitate the provision of information and/or discussion with First Nations, the public, community groups, environmental organizations and other stakeholders with concerns related to high priority watersheds.

O. Cost

Station	Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Sheridan Creek	$66,000	$13,440	$13,440	$13,440	$13,440	$13,440	$133,200
Windy Creek	$59,000	$13,440	$13,440	$13,440	$13,440		$112,760
Judson Creek	$54,000	$13,440	$13,440	$13,440	$13,440		$107,760
Dash Creek	$21,000	$35,000	$25,000	$25,000	$25,000	$25,000	$156,000
Bridge Creek	$71,000	$13,440	$13,440	$13,440	$13,440	$13,440	$138,200
Joe Ross	$18,400	$7,650	$7,650	$7,650			$41,350

Number **SSFM-29**
Title **Development of a Predictive Model for Stream Shade**
Proponent **Pat Teti, MOF Research**

Description of Issue

A. Overview

The Horsefly River and its tributaries contains some of the most important fish habitat in the Fraser River system. The highest economic value is derived from sockeye spawning and rearing habitat. The dominant sockeye run in 1993 comprised 51% of Fraser River sockeye production and yielded a catch worth 68 million dollars (Fisheries and Oceans file data). The Horsefly watershed is also important to agriculture and the forest industry. Forest licensees and the Small Business Program currently harvest approximately 425,000 m^3 from the drainage annually.

In some years, the temperature of the Horsefly River and some of its tributaries reaches levels that are well above the optimum for fish. This is largely a natural phenomenon but it is also known that the removal of riparian vegetation increases the exposure of streams to sunlight and that this tends to increase daytime stream temperatures in the summer. Therefore, both agriculture and forestry are suspected as contributing to high stream temperatures due to historical and ongoing riparian management practices. Unfortunately, we do not know the contribution of these land uses to either decreased shade or increased stream temperature.

These stream temperature issues are even more serious in the Nicola watershed (Merritt Forest District) where high stream temperatures are well documented and a number of streams have been officially designated "temperature sensitive" with potentially serious timber supply implications. This project would help address questions about the Nicola watershed as well as the Horsefly watershed.

The purpose of this project is to inventory stream shade across a sample of streams with different topographic and vegetation features. This will be used to develop a predictive relation between surrogate variables and stream shade and, in conjunction with other projects, to test stream temperature models and riparian management scenarios.

The objectives are to:

1. Sample stream shade on stream reaches in the Horsefly watershed.
2. Collect other measurements which are expected to control stream shade such as channel width, topography, BGC zone and seral stage.
3. Develop a predictive relationship for stream shade from surrogate variables.

The geographical scope is the Horsefly watershed, upstream from the town of Horsefly.

B. Use of New Knowledge

A predictive model for stream shade would allow managers to make more rational decisions about whether fisheries values are being adequately protected as directed by the CCLUP. The proposed inventory will provide current shade data for a sample of streams and will allow a predictive model for stream shade to be developed.

C. Relationship to Sustainable Forest Management

Given the known temperature problems for fish, there is the potential for designation of streams in the Horsefly watershed as "temperature sensitive." This would have significant management implications by way of Section 22 of the Timber Harvesting Practices Regulation. This formal designation has already occurred in the Nicola watershed of the Merritt district. A predictive relationship for stream shade from this project would be useful for answering stream temperature questions in the Horsefly and Nicola watersheds.

D. Use of Improved Knowledge

Same as described under "Use of New Knowledge" above.

E. Challenges and Constraints

Accessibility of some streams by foot. No significant challenges or constraints.

Knowledge Gaps

F. Existing Information

There are predictive models for stream shade developed in the U.S. but they are of questionable utility for small streams in BC.

G. Knowledge Gap

There is evidence in the scientific literature that "Angular Canopy Density" (ACD) as described by Beschta, *et al.* (1987) and Wooldridge and Stern (1979) is the most accurate measure of stream shade for our purposes. However, there is no ACD inventory data available in BC and there is no existing predictive model for this shade parameter as described herein. This project will inventory stream shade as ACD and develop a predictive model for average ACD by stream reach as a function of other stream reach parameters.

Proposed Project

H. Project Description

Select base maps and aerial photos. Select a stratified random sample of homogeneous stream reaches stratified by major independent variables such as clearcut < 5 years old, clearcut 10-15 years old, streams < 3 m wide, and streams > 3 m wide. Sample stream reaches for shade as ACD and other physical variables. Develop empirical model for predicting ACD.

I. Function

Using procedures developed by the Cariboo Region research hydrologist, this program provides actual stream shade data for a sample of stream reaches and a stream shade predictive model.

J. Sustainable Forest Management

The program addresses an operational need described in the report, "Recommendations for Managing the Effects of Forest Practices on Stream Temperature in British Columbia" by Patrick Teti.

K. Location

The project will take place in the Horsefly River and its tributaries, upstream from the town of Horsefly. The results are expected to relevant both locally and within similar BGC zones in the Interior.

L. Timeframe

Field work mainly in August and September to coincide with higher stream temperatures. Preparation and analysis throughout the year. The proposed duration of the project is four years.

M. Benefits

Knowledge from this program will allow technical staff and managers to make more rational decisions about the effects of forestry activities on stream shade and to identify the most advantageous sites for restoring stream shade.

N. Performance Indicators

- Satisfactory identification of stream reaches.
- Satisfactory collection of shade and other stream reach data.
- Satisfactory analysis and presentation of data and predictive model for stream shade.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$0		$19,000	$19,000	$19,000	$19,000	$76,000

Number	**SSFM-30**
Title	CCLUP WILDCRAFT/AGRO-FORESTRY TARGETS
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview

This newly recognized resource sector involves the commercial harvest of various naturally occurring products, including wild mushrooms, berries and other materials. The development of targets for this sector is considerably constrained by the lack of resource inventory and utilization data.

A target for this sector is to maintain the existing resource and enhance the existing level of use. Another important target is to maintain key pine mushroom harvesting sites in a condition that promotes mushroom growth.

The strategies for the wildcraft sector focus on:
- Greatly improving the resource information base for this industry.
- Addressing the need for tenure for wildcraft harvesters.
- Ensuring that the subsequent planning processes address wildcraft interests.
- Ensuring that known wildcraft values are incorporated into forest management activities.

B. Use of New Knowledge

Sub-Regional and Landscape Unit planning will benefit from the acquisition of new knowledge around this relatively new resource activity.

C. Relationship to Sustainable Forest Management

Sub-Regional and Landscape Unit planning will not be able to provide direction for management and utilization of this resource without the acquisition of key information.

D. Use of Improved Knowledge

Very little documented knowledge exists or has been compiled about this new resource sector. Any compilation of existing or new information will improve the level of knowledge needed to determine sustainability.

E. Challenges and Constraints

Very little is known or documented about this resource. The collection of new data and acquisition of new knowledge will be difficult.

Knowledge Gaps

F. Existing Information

The current level of currently existing knowledge is unknown.

G. Knowledge Gap

Resource inventory of naturally occurring products that are commercially harvested or have the potential for harvest. Medicinal use of naturally occurring products is expanding at a rapid rate, the potential at this time is unknown, as are the resource management implications of the harvesting of these products.

Proposed Project

H. Project Description

Inventory of current wildcraft activities and known associated management issues. Information is currently lacking or unavailable on the extent of current and potential wildcraft resource use, making credible input to sub-regional and landscape unit planning very difficult. The CCLUP instructs that a solid database of the wildcraft resource should be established and is necessary to ensure effective implementation of the wildcraft targets. This project will allow the scoping of a process to collect inventory information on the wildcraft resource.

I. Function

This project will allow the scoping of a process to collect inventory information on the wildcraft resource. Further inventory and research needs will be identified.

J. Sustainable Forest Management

In order to develop strategies for the management of this resource, basic inventory information must be collected. Prior to that, however, what information must be collected must be first known and processes developed to collect that information.

K. Location

The project will focus primarily on the western half of the Cariboo Region, primarily west of the Fraser River where these activities currently take place.

L. Timeframe

Three years will be required to complete this process.

M. Benefits

Inventory information will be to set harvesting targets, develop strategies for the management of the resource and reduce the impact that harvesting will have on other forest resources.

N. Performance Indicators

Harvesting targets will be set and strategies for the management of the resource developed.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$10,000	$25,000	$25,000	0	$60,000

Number	**SSFM-31**
Title	**CCLUP Visual Targets and TSR Modeling of Visual Targets**
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview
Current visual inventories need to be refined so that only the amount of area required to meet the visual targets is constrained. Unrefined inventories do not permit the maximization of overlaps with other non-timber values and can result in unnecessary constraints in timber access and supply. This issue is applicable across the Cariboo Region and requires the development and use of more sophisticated techniques in the field of visual landscape design and analysis.

B. Use of New Knowledge
The new knowledge can be incorporated into Sub-Regional Planning and into TSR3 modeling of CCLUP and SRP visual constraints on the land base.

C. Relationship to Sustainable Forest Management
Long-term harvest rates can be more accurately determined.

D. Use of Improved Knowledge
Will allow for more accurate representation of visual constraints on the timber harvesting landbase.

E. Challenges and Constraints
Public acceptance of long-term harvest levels.

Knowledge Gaps

F. Existing Information
Existing visual inventories (some non-digital) conducted in the 1980's and early 1990's.

G. Knowledge Gaps
- Continuation of the current TRIM II project to cover the remainder of the Cariboo Region.
- Test TRIM II for its adequacy of depicting visually constrained areas.
- Refinement of existing visual resource inventories, using TRIM 2, to more accurately define, spatially depict and allow analysis of visually constrained areas resulting from strategic planning.
- Visual Effects Modeling – Apply Digital Terrain Modeling to more accurately define visually constrained areas.
- Apply above to SRDZs only, rather than the whole region.

Proposed Project

H. Project Description
Refinement of existing visual resource inventories, using TRIM II, to more accurately define, spatially depict and allow analysis of visually constrained areas resulting from strategic planning.

I. Function
This project will provide data that contributes to the refinement of the visual modeling assumptions.

J. Sustainable Forest Management
Timber targets can be maintained.

K. Location

The project will be conducted throughout the entire Cariboo Forest Region on a visual landscape priority basis.

L. Timeframe

3 years.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the TSAs in the Cariboo Forest Region.

N. Performance Indicators

Sub-Regional Planning and TSR will be better able to model CCLUP visual targets.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$50,000				$50,000

Number	**SSFM-32**
Title	**Terrestrial Resource Inventory Mapping (TRIM II)**
Proponent	**Al Hunter, West Fraser, Quesnel** **Gerry Powell, Tolko, Quesnel**

Description of Issue

A. Overview

The issue is that the base maps for much of the Cariboo Forest Region are hopelessly out of date, which compromises the ability of licencee and agency staff to properly plan and evaluate activities, projects and status of elements critical to the CCLUP and to FRBC. This project proposes to continue a multi-year project to update 1:20,000 base maps (roads, water features, topography) for the Cariboo Forest Region and to produce orthophotos by UTM mapsheet.

B. Use of New Knowledge

The TRIM maps provide the basis for all mapping done in the Region. The existing TRIM maps are out of date, especially with respect to roads. Accurate and up-to-date maps are critical for all planning and monitoring activities related to the CCLUP and FRBC.

C. Relationship to Sustainable Forest Management

This is a continuing project involving all licencees in the Cariboo Forest Region. Inadequate maps compromise the ability to produce comprehensive plans and increase the risk of missing critical factors in those plans.

D. Use of Improved Knowledge

Complete, accurate and up-to-date maps are the foundation of quality planning for:

- CCLUP wetland, stream and lakes classification,
- TSR stream and lakes classification,
- CCLUP and TSR riparian impacts,
- Old Growth Management Areas, and
- Wildlife Tree Patches.

E. Challenges and Constraints

No challenges or constraints are anticipated.

Knowledge Gaps

F. Existing Information

TRIM I maps already exist, which provide a reference for TRIM II.

G. Knowledge Gap

There are no knowledge gaps relative to this project. The methodology and technology are well established.

Proposed Project

H. Project Description

The project is a continuing multi-year project. A steering committee of licencees and Ministry staff has been established to set year-to-year work priorities. The project has several prime steps:

- Acquire 1:40,000 black and white photos of the project area.
- Complete aerial triangulation to geo-reference the photos.

- Scan the photos to produce digital images.
- Remove parallax from the digital images using the digital terrain model from TRIM I.
- Drape TRIM I over the digital images and digitize new features or correct old ones.
- Produce 1:20,000 TRIM II and orthophotos.

Geographic Data BC will provide technical advice and quality control.

I. Function

The TRIM II maps will provide an accurate and up-to-date base for planning and monitoring CCLUP and FRBC activities.

J. Sustainable Forest Management

Accurate and up-to-date base maps are an indispensable tool for all planning and activity on the land base.

K. Location

This project will apply to all of the Cariboo Forest Region and will be used by all licensees and government agencies.

L. Timeframe

This project started in 1998 with the planning phase. It is scheduled to continue through the fiscal year 2002/2003.

M. Benefits

The primary benefit will the existence of accurate and up-to-date base maps. The TRIM II provides the base for any other mapping projects, such as terrestrial ecosystem mapping, predictive ecosystem mapping, and various resource inventory mapping projects.

N. Performance Indicators

Success will measured by the production of complete TRIM II coverage for the Cariboo Forest Region.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$170,000	$500,000	$500,000	$500,000			$1,670,000

Note: Tolko is prepared to commit $50,000 for the 2001/02 fiscal year.

Number	**SSFM-33A, 33B and 33C**
Title	**Vegetation Resource Inventory – Phase II (Field Plots)**
Proponent	**Lyle Resh, MOF**

Description of Issue

A. Overview

Recent forest audit results show that the inventories in the Cariboo Forest Region of the 1970's and portions of the 1990's overestimated volume. The inventory requires an adjustment through the Vegetation Resource Inventory (VRI) process.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3 estimates of volume.

C. Relationship to Sustainable Forest Management

Long-term harvest rates can be more accurately determined on a local (TSA) basis.

D. Use of Improved Knowledge

Will allow for more accurate estimate of site specific volume in Forest Inventory.

E. Challenges and Constraints

Public, industry and government acceptance of detailed Forest Inventory maps relating to long-term growth potential and harvesting of timber.

Knowledge Gaps

F. Existing Information

Forest Inventory is from 1970 and 1995. Use of air photo classification and limited ground truthing.

G. Knowledge Gap

TSA/species-specific inventory adjustment factors are needed to adjust current Inventories.

Proposed Projects

H. Project Description

The current Forest Inventory is based on the Unit Survey completed in 1976. Since then, there have been periodic updates. However, in the past there was no sampling frame or means of compiling the information to provide statistical validity. The VRI was developed to determine the amount of vegetation cover in the province, the location of the vegetation resources and changes in the vegetation amount, and to conduct monitoring. As plots are established, the Forest Inventory becomes more reliable at a detailed level.

This project consists of three components by TSA:

Quesnel TSA (SSFM-33A)

Establish 100 plots for the next three years for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.

Williams Lake TSA (SSFM-33B)

Establish 50 plots for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.

100 Mile TSA (SSFM-33C)

Establish 100 plots for the next three years for a total of approximately 300 plots relating to the validity of the existing Forest Inventory.

I. Function

This project will provide data that contribute to better information on a localized polygon basis.

J. Sustainable Forest Management

Timber targets (AAC) can be maintained.

K. Location

Each TSA (Quesnel, Williams Lake and 100 Mile House).

L. Timeframe

These plots should ground-truth most of the areas of concern in this TSA and is expected to be completed by 2004.

M. Benefits

More accurate Forest Inventory volume estimates, which will provide more certainty around mid- and long-term harvest levels for the TSA in the Cariboo Forest Region.

N. Performance Indicators

Ground-truthed polygons which are adjusted according to data collected.

O. Cost

TSA	Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
Quesnel	Approx. $0	0	$150,000	$150,000	$150,000		$450,000
Williams Lake	Approx. $300,000	$75,000	$75,000	0	0	0	$450,000
100 Mile	Approx. $0	0	$150,000	$150,000	$150,000		$450,000

Number	**SSFM-34**
Title	**Vegetation Resources Inventory Sampling on TFL 5**
Proponent	**Gerry Powell, Weldwood, Quesnel**

Description of Issue

A. Overview
The critical elements is the maintenance of Allowable Annual Cut (AAC) and to provide management of non-timber resources on TFL 5. The scope of this project will be TFL 5.

B. Use of New Knowledge
Opportunities for using this knowledge will help address the issue of AAC and non-timber resource management in the upcoming management plan for TFL 5.

C. Relationship to Sustainable Forest Management
The uncertainty of an acceptable level of AAC has an impact on both the timber and non-timber resources. It can also have a major impact on the economic viability of communities and companies.

D. Use of Improved Knowledge.
Improved knowledge will provide credibility to the establishment of the AAC and the management of non-timber resources, which is a critical component of sustainable forest management.

E. Challenges and Constraints
Vegetation Resources Inventory (VRI) methodology is not quite finalized yet.

Knowledge Gaps

F. Existing Information
Current timber inventory can be used as a starting point for VRI sampling.

G. Knowledge Gap
There is not much clarity around how VRI information can be used. As well, there are weaknesses of the current inventory, particularly in the management of non-timber resources.

Proposed Project

H. Project Description
A VRI sampling project will be conducted on TFL 5. The project will be carried out under contract to a consulting firm with expertise in inventory work.

I. Function
The VRI sampling is expected to provide information to assist in the management of non-timber resource issues on TFL 5, while maintaining or enhancing the current AAC.

J. Sustainable Forest Management
Maintenance of the existing AAC on TFL 5 is an important factor in sustainable forest management as well as to economic factors.

K. Location
The project will be conducted on TFL 5, and the results will have application to similar types around TFL 5.

L. Timeframe

The project will be conducted during the 2001 field season.

M. Benefits

The main benefit of the project will be the maintenance/enhancement of the AAC on TFL 5.

N. Performance Indicators

Better information to manage non-timber resources while maintaining the AAC on TFL 5.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$0		$75,000				$75,000

Number	SSFM-36
Title	Area of Roads and Landings for TSR Netdowns
Proponent	Tracy Earle, Lignum

Description of Issue

A. Overview
There is a lack of data representing a more realistic area netdown for roads and landings for TSR purposes.

B. Use of New Knowledge
To provide a more accurate quantity of area found in roads and landings on the IFPA. This knowledge will allow for a TSR netdown that will better represent the amount of roads and landings.

C. Relationship to Sustainable Forest Management
The information gathered in inventory projects provides knowledge regarding the amount of timber available for harvest.

D. Use of Improved Knowledge
The principles and criteria of SFM include knowledge and management of resources which includes timber. The knowledge gained under this project will allow for a more accurate representation of the amount of area that should be netted out of the landbase for TSR purposes.

E. Challenges and Constraints
None.

Knowledge Gaps

F. Existing Information
TRIM I line features to which one buffer width is applied, regardless of road width.

G. Knowledge Gap
True inventory width and area of roads and landings.

Proposed Project

H. Project Description
Roads and Landings Inventory with the collection of road classifications and landing areas.

I. Function
Data collection will fill some of the gaps in the road and landings regional inventory and will allow for a truer netdown % (or area) in TSR.

J. Sustainable Forest Management

K. Location
IFPA.

L. Timeframe
To be completed by March 2001.

M. Benefits

Project will identify road classifications (mainline, operational and block roads) and will delineate landing areas. This classification will then allow for an appropriate road width to be applied. From this road buffer, an area can be determined for TSR netdown purposes.

N. Performance Indicators

By meeting the TRIM 2 standards, the project will be deemed successful.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
	$20,000					$20,000

Number	SSFM-37
Title	**Assessment of Right-of-Way Widths of Roads and Ingress on Old Roads**
Proponent	Eric Johansen, MOF Planning

Description of Issue

A. Overview

The TSR reduces the productive forest land base using nominal road widths based on current standards. These widths need confirmation.

Ingress is currently assumed not to occur on any road class, from on-block to main roads. Ingress on secondary and operational roads has the potential to mitigate the losses.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3.

C. Relationship to Sustainable Forest Management

D. Use of Improved Knowledge

E. Challenges and Constraints

Improved confidence in the estimation of the productive land base and long-term harvest levels.

Knowledge Gaps

F. Existing Information

Current road widths used are based on construction and silviculture prescription standards. The amount of ingress is unknown.

G. Knowledge Gap

Actual road widths used are not compared against construction and silviculture prescription standards. The amount of ingress is unknown.

Proposed Project

H. Project Description

Road width surveys are needed in all three TSAs in the region and will include all four road classes.
Road ingress surveys are needed in all three TSAs in the region and will include three road classes, excluding main roads.

Individual projects will be identified in multi-year agreement holders' workplans.

I. Function

This project will provide the necessary data needed to confirm the operable land base for TSR purposes.

J. Sustainable Forest Management

Increased accuracy of long-term timber estimates are the result.

K. Location

The project will be conducted throughout the Cariboo Forest Region (except TFLs) on the productive land base identified in the TSR2 data packages.

L. Timeframe

This project is expected to be completed over a two-year period and is intended to provide input to TSR3.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the Cariboo Forest Region.

N. Performance Indicators

Sub-Regional Planning, Landscape Unit Planning and TSR.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$25,000	$25,000			$50,000

Number	**SSFM-38**
Title	**Resource Information Management Framework**
Proponent	**Rick Wheeler, Riverside**

Description of Issue

A. Overview
Using the Horsefly Forest District as a geographic subset of the Cariboo Forest Region, standardize all available resource information that is digitally available, develop the data links to facilitate data sharing, and provide easier access for analytical use and communications.

B. Use of New Knowledge
Integrate data that would enhance CCLUP implementation, TSR and certification initiatives through standardization and common input-output formats.

C. Relationship to Sustainable Forest Management
Increased flexibility to rapidly and efficiently meet changing access constraints so that integrity of data remains high and decision making timely.

D. Use of Improved Knowledge
Provide information to all interested parties in a standardized format.

E. Challenges and Constraints
Choice of the appropriate platforms, scales and data fields to fit majority needs.

Knowledge Gaps

F. Existing Information
Have a plethora of existing digital information and some that only requires translation to be utilized as an overlay.

G. Knowledge Gap
No off-the-shelf system to pull these information sources together.

Proposed Project

H. Project Description
Data library and conversion into standardized format.

I. Function
Easier input-output from a PC platform.

J. Sustainable Forest Management
Analytical tool.

K. Location
Horsefly Forest District. Good, mature databases already exist.

L. Timeframe
Six months.

M. Benefits

Enhance data collection, retrieval and presentation, minimizing misrepresentation and allowing a good communication and analytical tool.

N. Performance Indicators

Output in the form of overlays.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
		$95,000	$95,000	$95,000		$285,000

Number	**SSFM-39**
Title	**Timber Enhancement Strategy Development for the Cariboo Forest Region**
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview

The Cariboo-Chilcotin Land Use Plan (CCLUP) divided the resource land base into three different resource development zones, depending on intensity of use: Enhanced, Special and Integrated.

- The Enhanced Development Zone includes areas where economic benefits and jobs will be increased through intensive management development. Forest productivity will be maintained and enhanced through intensive reforestation, spacing, pruning, thinning and new forest practices.
- The Special Resource Development Zone is designated where significant fish, wildlife, ecosystem, backcountry recreation and tourism values exist. Timber harvesting, mining and grazing will take pale in this zone in a manner that respects these values.
- The Integrated Resource Management Zone includes areas that will be dedicated for sustained integrated resource use.

Timber Enhancement targets were not included in the CCLUP or the subsequent 90-day implementation report. These were to be developed in the ongoing process of implementing the Land Use Plan.

The Regional Manager of the Cariboo Forest Region established a joint MOF/industry Timber Investment Strategy committee (TISC) to identify silviculture investment opportunities for Forest Renewal BC. Interim investment opportunities and estimated impacts were developed in 1995. Subsequent to this local TISC (at the TSA level), committees were established to develop TSA level investment strategies. These groups to estimate forest estate level impacts of various levels of enhanced silviculture activities did forest estate modeling (using the TSR1 data packages). The results of these studies serve as the basis for current Resource Management Plans for FRBC's Sustainable Harvest strategic objective.

The Regional Manager of the Cariboo Forest Region also established a joint MOF/industry Options Working Group to investigate opportunities to mitigate the projected AAC falldown (TSR) in the Williams Lake TSA. This group conducted various studies and forest estate-level modeling using the TSR2 data package. It became apparent that similar studies and modeling should be done for the other TSAs in the Cariboo Forest Region and that enhancement opportunities for all TSAs (including the Williams Lake TSA) should be further investigated. To that end, the Timber Enhancement Strategy Committee (TESC) was formed and mandated to conduct this work. Over the next three years, the TESC will develop timber enhancement strategies (at the forest estate level).

B. Use of New Knowledge

Resource Management Plans for FRBC's Sustainable Harvest strategic objective will focus on the strategies developed by TESC. FRBC's Enhanced Forestry, and to some extent resource Inventory investments, will be guided by these strategies

Sub-Regional Plans and Landscape Unit-level Plans will determine where on the land base these activities will take place.

C. Relationship to Sustainable Forest Management

Having clear timber targets will guide the development of sub-regional and landscape level plans. Clear and sustainable timber harvest target levels will assist the development of sub-regional and landscape level plans.

D. Use of Improved Knowledge

Uncertainty around the sustainability of current harvest levels and potential for increasing long-term harvest levels may be resolved.

E. Challenges and Constraints

Public acceptance of increased long-term harvest levels.

Knowledge Gaps

F. Existing Information

Work done by the Options Working Group for the Williams Lake TSA will serve as template for the other TSAs. Projects were identified by the working group that were not done or completed due to funding and/or time constraints, or were lower priority at the time and will need to be reviewed for further study.

G. Knowledge Gap

1. Identification of timber enhancement opportunities for all TSAs in the Cariboo Forest Region, particularly the 100 Mile House and Quesnel TSAs.
2. Development of timber enhancement strategies for the consideration of the Regional Resource Board.
3. Forest estate modeling of enhancement opportunities to determine impact on short-, mid- and long-term harvest levels.

Proposed Project

H. Project Description

For each TSA in Cariboo Forest Region, TESC will:

1. Identify timber enhancement opportunities;
2. Develop Timber enhancement strategies;
3. Conduct forest estate modeling, using the most current TSR data package as the base case, testing the impact of the proposed strategies on short-, mid- and long-term harvest levels; and
4. Refine the strategies to provide the optimum proposed harvest levels.

Individual projects will be identified in multi-year agreement holders work plans.

I. Function

This project will provide the timber enhancement strategies mandated by the CCLUP.

J. Sustainable Forest Management

Timber targets will be provided to sub-regional and landscape level planning to determine where and how these activities will take place.

K. Location

The project will be conducted throughout the Cariboo Forest Region (except on TFLs) on the productive land base identified in the TSR2 data packages.

L. Timeframe

This project is expected to be completed over a three-year period and is intended to provide input to sub-regional and landscape unit planning, as well as TSR3.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the Cariboo Forest Region.

N. Performance Indicators

Sub-Regional Planning, Landscape Unit Planning and TSR will consider timber targets developed by TESC.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	$260,000	$500,000	$500,000			$1,260,000

Number	**SSFM-40**
Title	**Long Term Monitoring of Rehabilitated Landings within the Williams Lake and 100 Mile House TSAs**
Proponents	**Bill Chapman, MOF Research** **Ronald Meister, Inland Timber Mgmt., Lignum**

Description of Issue

A. Overview

Beginning in 1995, an innovative operational trial was initiated at the request of the District Managers in the Williams Lake, Horsefly and 100 Mile Forest Districts to find cost-efficient and effective methods for the rehabilitation of backlog landings. The reason for initiating a study at that time was that several larger licensees, including Lignum Ltd. and Weldwood of Canada Ltd., had expressed interest in large-scale rehabilitation of backlog and current landings. The trial was established with FRBC funding and with cooperation between the proponents – Lignum Ltd. and BC Ministry of Forests Research section in the Cariboo Forest Region. Inland Timber was the contractor that supervised the installation of the trial and performed the initial monitoring. Over 600 landings were treated using a large variety of site preparation, amelioration and planting treatments. Following treatment, the FRBC licensee proponent, Lignum Ltd., was committed to monitoring for two seasons, and thereafter, the MOF regional Research section assumed responsibility for the long-term monitoring of the trial. It is important that the monitoring continues so that the knowledge base in reclamation is expanded and that the value of foundation work done on the project is not lost.

B. Use of New Knowledge

Roads and landings occupy a significant portion of the forest land base. Researching effective and efficient methodology in land reclamation will have a positive effect on the AAC (and therefore the TSR) and will support community stability. Reclamation developments are beneficial to biodiversity and wildlife. This is an opportunity to accumulate knowledge of the essential elements of reclamation and resultant growth across the various sites.

C. Relationship to Sustainable Forest Management

Currently landings and roads do not contribute the AAC. Reclaiming these lands successfully will increase the timber flow and restore lost environmental values.

D. Use of Improved Knowledge

This project will contribute to the research database, operational guidelines, and prescriptions in the reclamation of landings and roads. Use of this improved knowledge will ensure the development of processes for optimal reclamation prescriptions.

E. Challenges and Constraints

There is resistance from ranchers who feel that non-forested landings contribute significantly to their AUMs and are an important component in their operations. Land managers are concerned that land reclamation may not prove to be economical.

Knowledge Gaps

F. Existing Information

The project has had annual reports since its inception. The last report, in March 2000, summarized the activities and presents the data collected to date.

G. Knowledge Gap

Research trials are ongoing throughout the province but this is one of only two such trials in the Cariboo and is by far the largest landing reclamation trial in the province. The trial is in its early stages and the data, while suggestive of good potential for landing rehabilitation, are short-term and still inconclusive. Continuity of data collection is essential to ensure meaningful results for operational application.

There is a need to find efficient, specialized methods to fully rehabilitate various disturbed sites. The trial is established and the initial monitoring has been done for one to two years after the plantation establishment. Keeping the trial ongoing is the most effective and cost-effective way to gather the type of long-term results needed to make longer term management decisions.

Proposed Project

H. Project Description

From 1995 to 1999 in the Horsefly, 100 Mile House and Williams Lake Forest Districts, 645 landings had various treatments of site preparation, amelioration and planting. This project was set as a multi-year project and monitoring is an essential component of the project. Specifically, the landing reclamation trial was established to determine suitable treatment regimes and how to deal with cattle interactions. The monitoring methodology was previous established in the trial and will be continued over the life of the trial.

I. Function

Results to date suggest that reclamation of severely disturbed sites can be successful and cost effective. Cattle management is essential to the success of reclamation in areas where ranching use of the land base is significant and this trial has focussed heavily on developing cattle management techniques for rehabilitated areas. Cattle management techniques could have much broader application than in rehabilitation. There are questions as to the long-term effectiveness and economics of reclamation and the continuation of monitoring in this trial will provide answers to those questions. The results of this trial are applicable to the rehabilitation of current roads and landings, which is a growing issue throughout the province as licensees attempt to keep more land in the productive land base.

J. **Sustainable Forest Management**

The ongoing monitoring of this operational research trial will add to our understanding of the dynamics of reclamation and place it into an environmental framework where natural resource values are enhanced. The value of a cost-effective methodology to put landing and road components back into the forest land base will be realized in the levels of AAC in the Williams Lake and 100 Mile House TSA.

K. **Location**

The project will occur over the 645 landings in the operational trial established in the Horsefly, 100 Mile House and Williams Lake Forest Districts on a majority of the biogeoclimatic subzones east of the Fraser River. These results will have a broad application over the entire Cariboo Region.

L. **Timeframe**

We propose that one-third of the trial landings should be monitored in each of the years 2000, 2001 and 2002; therefore, by 2002, each landing will have been re-measured once.

M. **Benefits**

The main benefits of this project are that it will:

- Generate information on how to efficiently rehabilitate a severely disturbed site.
- Obtain an understanding of how to manage silviculture/cattle interactions.
- Capture timber volume from areas which were lost from the timber land base.
- Quantify reclamation benefits to wildlife and biodiversity.
- Set targets and guidelines to establish successful reclamation.
- Document the long-term effectiveness of the various treatments.

N. **Performance Indicators**

Extension notes will be submitted to District Managers and major licensees in the area. An improvement in rehabilitation practices in the region is the ultimate test of the performance of this project, but at a more tangible level, all published reports will be peer reviewed.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$200,000	$45,000	$35,000	$45,000	0	0	$325,000

Number	SSFM-41
Title	**Growth and Yield Permanent Sample Plot (PSP) Maintenance throughout the Cariboo Forest Region**
Proponent	Eric Johansen, MOF Planning

Description of Issue

A. Overview

Growth and yield samples in natural stands have been established throughout the province since the early 1970's. Maintenance activities are carried out on a regularly scheduled basis. In order to ensure the retention of the investment in establishments, maintenance activities must be carried out as scheduled. As the age of the samples increases, the value of the investment in permanent sample plots also increases, as does the risk of loss.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3 estimates of available volume.

C. Relationship to Sustainable Forest Management

Long-term harvest rates can be more accurately determine on a local (TSA) basis.

D. Use of Improved Knowledge

Will allow for more accurate estimate of local growth potential.

E. Challenges and Constraints

Public acceptance of long-term harvest levels.

Knowledge Gaps

F. Existing Information

Uses provincial averages.

Proposed Project

H. Project Description

Individual projects will be identified in multi-year agreement holders work plans. Approximately 75 PSPs will require maintenance each year for the foreseeable future.

I. Function

This project will provide data that contributes to the development of localized yield tables.

J. Sustainable Forest Management

Timber targets can be maintained.

K. Location

The project will be conducted throughout the Quesnel Forest District.

L. Timeframe

This project will be ongoing indefinitely.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the TSAs in the Cariboo Forest Region.

N. Performance Indicators

Growth models adjusted.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$195,000	$195,000	$100,000	$120,000	$75,000	$80,000	$570,000

Number	**SSFM-42**
Title	**Growth and Yield Permanent Sample Plot (PSP) Re-Measurements in the Cariboo Forest Region**
Proponent	**Eric Johansen, MOF Planning**

Description of Issue

A. Overview
Growth and yield samples in natural stands have been established throughout the province since the early 1970's. Re-measurements are scheduled on a ten-year basis. The re-measurement data are used to calibrate the variable density yield program (VDYP) model. In order to ensure the retention of the investment in establishments, re-measurements must be carried out as scheduled. As the frequency of re-measurement increases, the value of the investment in PSPs also increases.

B. Use of New Knowledge
The new knowledge can be incorporated into TSR3 estimates of available volume.

C. Relationship to Sustainable Forest Management
Long-term harvest rates can be more accurately determine on a local (TSA) basis.

D. Use of Improved Knowledge
Will allow for more accurate estimate of local growth potential.

E. Challenges and Constraints
Public acceptance of long-term harvest levels.

Knowledge Gaps

F. Existing Information
Uses provincial averages.

Proposed Project

H. Project Description
Individual projects will be identified in multi-year agreement holders work plans. The re-measurement schedule is as follows for the next four years:

	No. of Permanent Sample Plots					
Fiscal Year	Quesnel District	Williams Lake District	Horsefly District	100 Mile House District	Chilcotin District	Total
2001/02	18	14	0	34	1	67
2002/03	3	28	15	29	14	89
2003/04	10	10	10	10	10	50
2004/05	10	3	16	20	4	53

I. Function
This project will provide data that contribute to the development of localized yield tables.

J. Sustainable Forest Management
Timber targets can be maintained.

K. Location

The project will be conducted throughout the entire Cariboo Forest Region.

L. Timeframe

This project is indefinitely ongoing but provides useful data each year.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the TSAs in the Cariboo Forest Region.

N. Performance Indicators

Growth models adjusted.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$195,000	$195,000	$100,000	$120,000	$75,000	$80,000	$570,000

Number	SSFM-43
Title	**Operational Adjustment Factor (OAF) Study for TIPSY**
Proponent	Eric Johansen, MOF Planning

Description of Issue

A. Overview

The TIPSY stand growth model uses OAFs to adjust for losses to site occupancy and other factors to generate a volume estimate for each growth type. This is used in the TSR/TFL processes to determine future timber supplies.

TSR2 used OAF 1 values of 12 – 15% and an OAF2 value of 5%. The TIPSY model assumes fully stocked stands. OAF 1 is used to adjust the model for less than full stocking, i.e. gaps and voids in stocking due to unmapped non-productive areas within a block. OAF2 adjusts the TIPSY model for losses due to disease over time. OAF2 starts at zero for young stands, gradually increasing up to 5% by 100 years (stand age).

B. Use of New Knowledge

The new knowledge will provide greater certainty in the predictions of mid- and long-term available volume timber estimates in TSR3.

C. Relationship to Sustainable Forest Management

D. Use of Improved Knowledge

E. Challenges and Constraints

Public acceptance of increased long-term harvest levels.

Knowledge Gaps

F. Existing Information

TSR2 used provincial averages for both OAFs.

G. Knowledge Gap

Regionally developed OAFs are not available and survey data do not exist.

Proposed Project

H. Project Description

OAF surveys in all three TSAs to be done using approved OAF methodology as approved by Victoria. Individual projects will be identified in multi-year agreement holders' workplans.

I. Function

This project will provide the necessary data needed to confirm the TSA-specific OAF reductions needed for TSR purposes.

J. Sustainable Forest Management

Timber yields will be projected with greater accuracy by TSA.

K. Location

The project will be conducted throughout the Cariboo Forest Region on the productive land base identified in the TSR2 data packages.

L. Timeframe

This project is expected to be completed over a two-year period and is intended to provide input to TSR3.

M. Benefits

This project will provide certainty around mid- and long-term harvest levels for the Cariboo Forest Region.

N. Performance Indicators

TSR.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	$70,000	$80,000				$150,000

Number SSFM-44
Title Terrain and Terrain Stability Classification in Selected Areas of the Cariboo Forest Region
Proponent Muhammed Sabur, MOF Engineering

Description of Issue

A. Overview

As described in *Dictionary of Natural Resources Management* by Julian and Katherine Dunster (1996), Sustainable Forest Management (SFM) is "the management practice that maintain the productive and renewal capacities, as well as the genetic, species and ecological diversity of forest ecosystem." SFM requires sustainable forest development which implies, as stated in the above reference, "maintaining, without unacceptable impairment, the productive and renewal capacities" of the landbase.

To maintain productivity and renewal capabilities of natural resources such as forestry, agriculture, wildlife, recreation and water production, the productivity and extent of the landbase must be maintained. To conserve the landbase, resource development activities such as logging (road building, landings, etc.) as well as silviculture activities, should be conducted in such a way that they do not cause landslide or mass wasting and/or soil erosion.

Some types of terrain are more susceptible to damage by these activities than others. Terrain and terrain stability classification maps (TSM) identify the susceptibility of sites in the landbase to mass wasting and erosion. These are used to assist the managers or planners, and the field personnel, to determine site susceptibility for different types of machinery, logging methods, and where to best locate access roads.

Knowledge Gaps

F. Existing Information

To date, in the Cariboo Forest Region, TSM (*reconnaissance and detailed levels) for nearly 1,263,000 ha of land has been completed. The completed area represents about 15% of the total land area (approximately 8,100,000 ha) of the Cariboo Forest Region. The locations and the extent of the mapped areas, and the levels of mapping are shown in Table 1 and Figure 1.

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* The primary objective of reconnaissance map is to identify all unstable or potentially unstable land areas. These maps are useful for long-range planning and for establishing operability lines and allowable annual cut netdown procedures. These are also effective tools for identifying land areas where more detailed mapping is required.

Detailed terrain mapping is conducted to collect and present information about the physical characteristics and properties of the land surface, and to provide detailed interpretative data on terrain stability conditions within forest development planning area. These maps identify areas that require on-site assessment of terrain stability prior to approval of road construction, cutblock boundaries, timber harvesting methods, etc.

Table 1. Locations and the areas of completed TSM in the Cariboo Forest Region.

Proponent	Location	Mapping Area (ha)	Mapping Type
Weldwood-Quesnel	Kimball/Windlass	7,100	Detail
West Fraser-Quesnel	TFL 52	100,700	Detail
Weldwood-Quesnel	Big Valley, Cunningham	130,000	Reconnaissance
Welwood-100 Mile	Jim/Windy, Boss	75,400	Detail
Weldwood-Quesnel	TFL 5	35,000	Detail
West Chilcotin FP	Dean and Klinaklini	572,000	Reconnaissance
Riverside FP	Horsefly River	85,500	Detail
	Lynx Creek	11,800	Detail
	Tisdall/McKinley	15,300	Reconnaissance
	Horsefly Lake	42,700	Reconnaissance
	Hen Ingram	16,900	Reconnaissance
	Polly/Bootjack	15,700	Reconnaissance
	Benny Lake	13,000	Reconnaissance
	Williams Lake	9,800	Reconnaissance
	Hawks/Johnny	3,6100	Reconnaissance
West Fraser-Williams Lake	Penfold/Roaring Creek	24,000	Detail
	Isaiah/Watt Creek	12,000	Detail
Ministry of Forests	Dash/Churn Creek	60,000	Reconnaissance
	Total:	1,263,000 ha	

Proposed Project

H. Project Description

Generally, it is assumed that because of its topography of relatively low relief, conducting TSM may not be necessary for most of the areas of the region. However, this assumption is misleading. Local experience indicates that slope instability on low-relief slopes is also a phenomenon frequently encountered in the Cariboo Forest Region.

An extensive area of the Cariboo Region is covered with fine-textured surficial materials. These materials are typically prone to mass movement (and erosion) which may occur even on slopes less than 30%.

Considering the information on landslide activities obtained from watershed assessment reports, a selection of additional TSM areas is shown in Table 2. For locations of each of these buckets (as identified by numbers), see Figure 2. The major watersheds and buckets are outlined by red dashed lines in Figure 2 and as well as in Figure 1.

Table 2. Areas proposed for TSM.

River Basin	Bucket	Area (ha)
Bowron	100	28,342
Bowron	104	33,572
Bowron	108	14,333
Chilcotin	119	27,668
Chilcotin	124	27,252
Chilcotin	124a	41,652
Chilcotin	124b	30,366
Chilcotin	128	10,989
Chilcotin	129	15,238
Chilcotin	130	45,815
Chilcotin	131	32,942

River Basin	Bucket	Area (ha)
Chilcotin	132	22,085
Chilcotin	133	10,189
Chilko	139a	41,944
Chilko	139b	28,103
Chilko	141b	43,823
Chilko	154	23,382
Chilko	159	33,155
Chilko	160	16,996
Chilko	163	10,832
Chilko	167	13,508
Chilko	171	43,951
Chilko	172	19,629
Chilko	174	23,335
Chilko	175	14,115
Chilko	177	26,736
Chilko	178	19,285
Chilko	180	26,255
Chilko	184	11,964
Chilko	185	46,057
Chilko	186	11,829
Chilko	187	30,442
Chilko	188	16,038
Chilko	189	5,984
Chilko	190	31,214
Fraser	297	33,408
Fraser	305	39,423
Mahood	354	5,785
Mahood	360	39,827
Mahood	363	12,066
Mahood	364	23,577
Mahood	372	13,888
Mahood	373	32,239
Mahood	375	15,977
Mahood	377	14,876
Quesnel	445	38,897
Quesnel	448	44,562
Quesnel	450	31,099
Quesnel	455	46,384
Quesnel	473	19,597
Quesnel	475	9,984
Quesnel	478	24,571
Quesnel	481	19,587
Quesnel	483	39,957
Quesnel	493	42,559
	Total area:	**1,427,283 ha**

Most of the watersheds enlisted in Table 2 will require partial mapping, i.e. mapping for stream valley areas only. The extent of the mapping areas for these watersheds can be determined during the project initiation phase.

Assuming that not more than 25% of the land area in the identified buckets will require mapping, the currently proposed mapping area is 356,820 ha (1427,283 ha x 0.25).

Note: Column 1 of Table 2 refers to the major river systems. Buckets in column 2 refer to the sub-basins or watersheds. The bucket boundaries represent crudely defined watershed boundaries. R. Page (1995) delineated these buckets on 1:50,000 NTS maps for the Cariboo Forest Region.

TSM is based on the production of terrain maps, usually at a scale of 1:20,000. Each terrain polygon is delineated in such a way that terrain variability within each polygon is minimized, and is assigned an estimated stability class based on slope, surficial materials, and evidence of previous instability and/or other landscape features (e.g. presence of gullies). These stability classes provide a relative ranking of the likelihood of a landslide occurring after timber harvesting or road construction. These rankings are used to identify potential problem areas so that appropriate measures are taken during planning and operational forest development.

J. Sustainable Forest Management

The information collected through the proposed project will enable planners and forestry personnel to work with terrain stability information designed to mitigate any adverse forestry development impacts due to terrain instability and slope failures, and which could be triggered by road construction, harvesting or silviculture activities.

K. Location

For project locations see Figure 2.

L. Timeframe

The duration of the project is two years (2001/2002 and 2002/2003).

O. Cost

The identified areas requires reconnaissance mapping. Currently, at the rate of $0.75 per ha, total estimated cost over two years is approximately $267,614 (356,820 ha x $0.75/ha).

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$0		$133,807	$133,807			$267,614

Number SSFM-45
Title Completion of Terrestrial Ecosystem Mapping and Regional Consolidation of TEM Wildlife Interpretations
Proponent Chris Swan, MELP

Description of Issue

A. Overview

There has been a great deal of time, energy and money spent on Terrestrial Ecosystem Mapping (TEM) over the past five years in the Cariboo Region. Most of these projects were conducted during the same timeframe and thus could not build upon the knowledge of the adjacent project, especially the wildlife models, assumptions and ratings. Most of these projects are nearly complete, but have not passed the final quality assurance checks. There are many reasons for this delay and there has been considerable extra effort on everyone's part to work towards completion of these projects. Due to the timing of all of these projects there are adjacent projects which have different wildlife ratings for the same ecosystem units. The main reason that the wildlife ratings are not approved and synchronized is due to timing of past projects and fiscal year end constraints. Ideally, one of these projects should be put over two fiscals: Year 1 for TEM completion and Year 2 for the wildlife portion since it cannot be fully reviewed until the TEM portion is complete. This timing problem has increased the time required for deliverables considerably because any errors found in TEM portion affect the wildlife portion so edits must be made in both. However, because of the size of these projects and different individuals completion different portions, the edits were not always made. This makes for many versions of products that don't match up.

B. Use of New Knowledge

TEMs with wildlife interpretations can be very powerful tools for sub-regional and forest management planning. These projects will be used for CCLUP implementation.

C. Relationship to Sustainable Forest Management

Various modeling and planning exercises can be conducted on this product. This will contribute to forest planning and sustainable management.

D. Use of Improved Knowledge

This issue must be resolved to make the best use of the more than $1.0 million spent to date on TEM projects in this region.

E. Challenges and Constraints

The challenge is to get the products to a completed state and then train all potential users so that the data is available and utilized to capacity.

Knowledge Gaps

F. Existing Information

All of the information is existing, it just needs to be finalized, cleaned and amalgamated.

G. Knowledge Gap

N/A

Proposed Project

H. Project Description

A contractor will be hired to finalize the TEM mapping. GIS support and a wildlife biologist will then be required to amalgamate all wildlife ratings from adjacent projects into one massive database, rate each ecosystem unit for wildlife, make wildlife maps, discuss/analyze maps/ratings tables with MELP quality assurance staff and reprint and re-analyze until the maps are correct. The final task will be training of all potential users by a qualified professional.

I. Function

This project will address the issue of outstanding and stand-alone TEM projects in the region. It will also provide training for appropriate people so that TEM's full potential is realized.

J. Sustainable Forest Management

Forest planning of vast areas will allow for analysis and decisions regarding sustainable harvest.

K. Location

TEM projects have been done in the following Cariboo Region forest districts: Quesnel, Williams Lake, Horsefly and Chilcotin.

L. Timeframe

One year.

M. Benefits

Completed TEM projects and a fully amalgamated and integrated TEM and wildlife product for the Region for use in forest planning. Another benefit would be training of potential users.

N. Performance Indicators

Fully completed products, trained individuals, and use of the deliverables in planning processes.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$70,000	0	0	0	$70,000

Number	SSFM-46
Title	**Mountain Pine Beetle Workshop**
Proponent	**Eric Johansen, MOF Planning**

Description of Issue

A. Overview

Mountain Pine Beetle (MPB) is a significant forest management issue in the Cariboo Region. The current infestation which started in 1992 has expanded into areas previously not attacked due to elevation and topography.

The downside for this attack cycle is extreme, with survival rates in the winter of 1999 of approximately 73%, as compared with 16% in 1996 and 15 green attacked trees per red attack tree. Infested area has expanded from 459 ha in 1992 to 36,878 ha, containing 1,836,723 m^3, in 1999.

Early reports for the Year 2000 MPB flight are showing an even greater attack ratio than in 1999. Significant action is needed to institute control and salvage of this attack cycle. A workshop of experts is recommended to allow for dissemination of the latest management strategies.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3 estimates of available volume.

C. Relationship to Sustainable Forest Management

D. Use of Improved Knowledge

E. Challenges and Constraints

Public acceptance of increased long-term harvest levels.

Knowledge Gaps

F. Existing Information

G. Knowledge Gap

Proposed Project

H. Project Description

A workshop of international experts to review the past methods of control and alternative approaches to management and control of MPB is needed. The delivery agent, through a qualified contractor, will be responsible for the organization of the workshop, which includes soliciting papers for presentation by acknowledged experts in MPB research and control, arranging for workshop facilities and for travel and accommodation for workshop participants; facilitation during the workshop, and preparation of a workshop report that will include papers presented, discussions and recommendations

I. Function

This project will provide the latest knowledge regarding MPB management and impact projection.

J. Sustainable Forest Management

Long-term timber targets can be modeled with greater certainty in TSR3.

K. Location

The workshop will be delivered in Williams Lake.

L. Timeframe

This project is expected to be completed in one workshop in winter/spring 2000/01.

M. Benefits

This project will provide greater certainty around MPB management in the Cariboo Forest Region.

N. Performance Indicators

Improved MPB management.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0		$50,000				$50,000

Number	SSFM-47
Title	**Impact Assessment of Fir Bark Beetle Management on Forest Structure in the Interior Douglas Fir Zone in the Military Reserve (Control) and Surrounding Area, Cariboo Forest Region.**
Proponent	**Chris Swan, MELP**

Description of Issue

A. Overview

Considerable effort has been put into Douglas-fir bark beetle (FBB) management in the Cariboo Forest Region over the past decade. An analysis of past and current FBB activity in the Military Reserve and the surrounding area is needed along with an investigation of the affects of intensive FBB management practices. The impacts of this salvage harvesting have not been measured with respect to remaining forest structure and wildlife attributes, and with regards to forest health and biodiversity, the issue of unknown effects is significant.

B. Use of New Knowledge

The knowledge gained by this impact assessment may outline options for alternative forest development approaches in the future. This may have impacts on timber supply and CCLUP implementation. This project also relates to the Forest Practices Code Biodiversity handbook and would most likely support certification efforts.

C. Relationship to Sustainable Forest Management

The risks of not investigating this issue are continual FBB activity and salvage harvesting with unmeasured effects on forest structure and wildlife attributes. There may be a better way to find a balance between desired forest structure to maintain wildlife attributes and sustainable harvest management. Any certainty to the flow of timber due to beetle attack would be beneficial.

D. Use of Improved Knowledge

This new knowledge should improve the stability of timber flow of FBB-attacked trees while maintaining adequate forest attributes for wildlife and low risk to the spread of FBB.

E. Challenges and Constraints

The challenge will be to use this information in the most effective manner.

Knowledge Gaps

F. Existing Information

The extent of existing regional information relating to this issue is small.

G. Knowledge Gap

There are knowledge gaps relating to:

- Spread of the FBB in the Military Reserve vs. spread in the surrounding harvested areas.
- Forest structure attributes remaining after FBB harvesting.
- Wildlife attributes remaining after FBB harvesting.
- Potential impact of continued salvage harvesting on biodiversity.
- Potential options for alternate harvesting systems to control the spread of FBB.
- The Military Reserve as a continual FBB host after a decade of producing beetles.

Proposed Project

H. Project Description

The overall study area (IDF zone west of the Fraser River) will be split into two separate areas: the Military Reserve or control, and the outer area or experiment. Both areas will be laid out in a grid pattern and sampled via cruise plots. Information on forest structure, wildlife attributes, FBB activity, etc. will be collected, analyzed and mapped.

I. Function

Enough field information will be collected to satisfy all questions relating to the control vs. experimental areas with respect to the spread of FBB and the affects from past harvesting techniques.

J. Sustainable Forest Management

This project will increase the knowledge of affects on forest attributes due to the activity of the FBB and may provide stability to the Beetle Salvage Permitting system.

K. Location

The location will be in the Cariboo Forest Region in the IDF zone, west of the Fraser River between Highway 20 and Quesnel, encompassing the Military Reserve.

L. Timeframe

One year.

M. Benefits

Increased knowledge of uncontrolled vs. controlled areas of FBB attack, increased knowledge of the impacts of current FBB salvage harvesting techniques, and increased stability in the FBB Salvage Permitting system.

N. Performance Indicators

Increased stability in the FBB Salvage Permitting system and possibly alternative harvesting techniques employed to maintain wildlife attributes in the forest structure.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$50,000	0	0	0	$50,000

Number	**SSFM-48**
Title	**Root Rot Predictor Model Assessment**
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview

Root rots are a significant forest management issue in the Cariboo Region. They occur in all TSAs at various levels. Estimates of volume losses on an annual basis are significant, yet have not been mapped. Actual losses by TSA are unknown.

TSR assumes root rot losses are included in the VDYP growth model at endemic levels. VDYP plots were established 25 to 35 years ago and do not reflect current conditions.

A predictive model is needed to enable mapping of high probability areas for root rot and to allow for greater accuracy in estimating the effect of root rots.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3 estimates of available volume and into operational plans.

C. Relationship to Sustainable Forest Management

Long term harvest rates can be more accurately determined on a local (TSA) basis.

D. Use of Improved Knowledge

E. Challenges and Constraints

Public acceptance of increased long-term harvest levels.

Knowledge Gaps

F. Existing Information

TSR assumes root rot losses are included in the VDYP growth model at endemic levels. Operational plans deal with rot rots as they are found.

G. Knowledge Gap

VDYP plots were established 25 to 35 years ago and do not reflect current conditions. Root rot models exist but have not been assessed against or calibrated for local conditions.

Proposed Project

H. Project Description

A review of root rot models that could be applied to the Cariboo Forest Region is required. Models that may be applicable have to be tested prior to application. Proprietary models may have to be purchased. A report and recommendation on the models tested will be completed.

I. Function

This project will enable greater accuracy in the prediction of volume losses to root rot and its occurrence.

J. Sustainable Forest Management

Long-term timber targets can be modeled with greater certainty in TSR3.

K. Location

Williams Lake, 100 Mile and Quesnel TSAs.

L. Timeframe

This project is expected to be completed in 2001/02.

M. Benefits

This project will provide greater certainty around root rot prediction and management in the Cariboo Forest Region.

N. Performance Indicators

Improved root rot volume loss prediction and management.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0		$20,000				$20,000

Number	SSFM-48
Title	**Root Rot Predictor Model Assessment**
Proponent	**Ray Leduc, MOF Forest Renewal Planner**

Description of Issue

A. Overview

Root rots are a significant forest management issue in the Cariboo Region. They occur in all TSAs at various levels. Estimates of volume losses on an annual basis are significant, yet have not been mapped. Actual losses by TSA are unknown.

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A predictive model is needed to enable mapping of high probability areas for root rot and to allow for greater accuracy in estimating the effect of root rots.

B. Use of New Knowledge

The new knowledge can be incorporated into TSR3 estimates of available volume and into operational plans.

C. Relationship to Sustainable Forest Management

Long term harvest rates can be more accurately determined on a local (TSA) basis.

D. Use of Improved Knowledge

E. Challenges and Constraints

Public acceptance of increased long-term harvest levels.

Knowledge Gaps

F. Existing Information

TSR assumes root rot losses are included in the VDYP growth model at endemic levels. Operational plans deal with rot rots as they are found.

G. Knowledge Gap

VDYP plots were established 25 to 35 years ago and do not reflect current conditions. Root rot models exist but have not been assessed against or calibrated for local conditions.

Proposed Project

H. Project Description

A review of root rot models that could be applied to the Cariboo Forest Region is required. Models that may be applicable have to be tested prior to application. Proprietary models may have to be purchased. A report and recommendation on the models tested will be completed.

I. Function

This project will enable greater accuracy in the prediction of volume losses to root rot and its occurrence.

J. Sustainable Forest Management

Long-term timber targets can be modeled with greater certainty in TSR3.

K. Location

Williams Lake, 100 Mile and Quesnel TSAs.

L. Timeframe

This project is expected to be completed in 2001/02.

M. Benefits

This project will provide greater certainty around root rot prediction and management in the Cariboo Forest Region.

N. Performance Indicators

Improved root rot volume loss prediction and management.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0		$20,000				$20,000

Number SSFM-49

Title

Reconnaissance 1:20,000 Fish and Fish Habitat Inventory

Proponent Tom Wilkinson, MELP

Description of Issue

A. Overview

Reconnaissance 1:20,000 surveys provide information on fish distribution, relative abundance and various habitat parameters. The information is suitable for use in landscape and forest development planning. In addition, this inventory methodology has been developed so that data collected from randomly selected field sites within the watershed can be modeled to provide interpretative information for the entire watershed. An intensive inventory program is required in order to address the high portion of Cariboo Region streams that have not been inventoried.

B. Use of New Knowledge

Primarily, this information will be used to provide information on watershed-wide fish populations in areas where forest harvesting is underway or planned. Various planning processes will require the information in order to address concerns about both anadromous and non-anadromous fish stocks. It also provides the base for identifying:

- specific fish and fish habitat values requiring enhanced fish protection,
- sensitive fish bearing waters to trigger terrain stability assessments,
- temperature sensitive (bull trout) streams for enhanced riparian protection, and
- unusual life history timings (for modified in-stream work periods).

The interpreted information will be suitable for use in operational planning of forestry activities, including, in many cases, Fish Stream Identification. FRBC no longer funds inventories to classify discrete stream reaches that border proposed roads and cutblocks. Therefore, extrapolated 1:20,000 data will be the primary means of obtaining fish and fish habitat inventory information suitable for operational fish/forestry planning. Reconnaissance 1:20,000 inventory will also allow forest companies to dovetail their Forest Practices Code operational fish inventories with FRBC-funded inventories.

C. Relationship to Sustainable Forest Management

D. Use of Improved Knowledge

E. Challenges and Constraints

Knowledge Gaps

F. Existing Information

- FRBC has been funding the fish and fish habitat inventory program since 1995.
- Approximately 60 watersheds have received watershed-wide inventory.
- Information is available through Ministry libraries, the internet and on GIS.
- Many watersheds that are being presently logged have only been inventoried at the Fish Stream Identification level. This information is not sufficient to allow for watershed planning to adequately protect various fish stocks

G. Knowledge Gap

- Less than 40% of the Cariboo MELP Region has been inventoried.

- Fish and fish habitat information is critical to planning processes including LRMP, Sub-Regional Plans and Local Area Agreements.
- Watershed-wide inventory is required to address non-anadromous, and sometimes unique, stocks.
- Forest companies require watershed-wide information to assist in operational planning.
- Reconnaissance (1:20,000) Fish and Fish Habitat Inventory must continue at regional capacity for the next 15 years in order to address high and medium priority watersheds.

Proposed Project

H. Project Description

Industry-led high priority 1:20,000 Fish and Fish Habitat Inventories will provide the information on watersheds where forest harvesting is underway or planned.

Reconnaissance 1:20,000 surveys provide information suitable for use in landscape and forest development planning. In addition, this inventory methodology has been developed so that data collected from randomly selected field sites within the watershed can be modeled to provide interpretative information for the entire watershed.

Watersheds to receive inventory have been prioritized by MELP, Forest companies and DFO. Annual re-evaluation of the priority watersheds will be required to address changes in forest harvest locations.

Forest companies involved in Fish and Fish Habitat Inventory in the Cariboo Region include:

Quesnel TSA:	Slocan, Tolko, Weldwood, West Fraser
Williams Lake TSA:	Weldwood, Riverside, West Fraser, Yun Ka Whu'Ten, Lignum
100 Mile TSA	Ainsworth, Weldwood, Lignum

I. Function

Inventory information on the above project streams will provide important fish and fish habitat information on the high priority watersheds in the Cariboo Region. A continued inventory program by forest companies will address the large gap in regional fish information.

J. Sustainable Forest Management

Watershed-wide information on fish stocks will allow forest planning to include measures to protect fish stocks. This will reduce the impact of having to implement special measures to protect fish stocks at the operational level.

Watershed fish presence information will reduce the use of default fish-bearing status, potentially allowing additional harvesting of areas near streams.

K. Location

Watersheds to receive inventory in the next five years include:

- Upper Blackwater watershed
- Dean River tributaries
- Nazko watershed
- Klinaklini River watershed
- Quesnel River tributaries
- Mackin Creek watershed
- Viewland watersheds
- Gaspard Creek
- Upper and mid Cariboo River tributaries
- Eagle Creek watershed
- Upper Chilcotin River
- Jim/Windy watershed
- Upper Homathko watershed
- Bonaparte River watershed

- Others

L. Timeframe

At the present rate of inventory in the Cariboo Region, the inventory program will have to continue for at least 15 years to address fish stocks in high- and medium-priority watersheds.

M. Benefits

The main benefit of watershed-wide fish inventory is being able to provide protective measures for fish populations during the early stages of forest management planning. Forest companies will eventually see reduced operational costs as a result of long-term planning.

N. Performance Indicators

Production of watershed reports for 1:20,000 Fish Inventory and the integration of the information into watershed forest planning; digital information into provincial databases; and roll-up of information into FISS mapping.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
$8,000.00		$1,500,000	$1,500,000	$1,500,000	$1,500,000	$22,000,000

Number	**SSFM-50**
Title	**Validation and Localization of Taper Equations**
Proponent	**Tracy Earle, Lignum**

Description of Issue

A. Overview

Tree volume for the forest inventory is estimated by using a regional taper equation for gross volume. It is believed that the regional taper equation does not reflect the existing stand conditions from which volume estimates in TSR are derived and projected in the Cariboo Region.

B. Use of New Knowledge

A validated and localized set of taper equations will be used primarily in TSR for volume projections; however, the equation/s are used in all volume calculations currently being completed in the province through tools such as VDYP and cruise compilers.

C. Relationship to Sustainable Forest Management

It is thought that the existing provincial taper equations are underestimating the amount of volume on existing and future stands. Through an in-depth analysis of the equations, in conjunction with the addition of local data, it is believed that more accurate volume calculations can be completed. Without the validation and localization of these curves, the underestimation of volume will continue in the TSR and all other planning initiatives.

D. Use of Improved Knowledge

Currently, there is a lack of certainty regarding our ability to accurately measure and predict net and gross volume in the inventory. This project is designed to firstly validate the existing provincial taper equations and secondly to localize the equations to the Cariboo Region.

E. Challenges and Constraints

Knowledge Gaps

F. Existing Information

Existing stem analysis data will be used to determine if more data are required and in which strata/geographic location.

G. Knowledge Gap

Very little stem analysis data has been collected in the Cariboo Region for validation and localization of these equations.

Proposed Project

H. Project Description

I. Function

The data being collected under this program are intended to validate and localize provincial taper equations. It is expected that one of the outcomes of this program will demonstrate that the provincial taper equations do not accurately represent the observed taper in the lodgepole pine stands within the Cariboo Region..

J. Sustainable Forest Management

K. Location

This project is planned to be representative of the Lignum IFPA but results can be extrapolated to the entire region.

L. Timeframe

The validation of the existing data is expected to start April 1, 2001 and be completed by May 15, 2001. Additional field work will likely be required, which will commence June 1, 2001 and be completed by October 31, 2001. Further stem analysis will be required for the additional field information, which will be completed by March 1, 2002.

M. Benefits

The validation and localization of the taper equations will provide for a more accurate calculation of existing net and gross volume for the entire Cariboo Region. The resulting curves will also provide a more realistic estimate of the future volumes on a given landbase.

N. Performance Indicators

At any point in time, a comparison between the estimated and actual (observed) net/gross volume can be completed as a check on the accuracy of the localized curves.

O. Cost

Cost to Date	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	Total
0	0	$20,000				$20,000

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN

2001/2002

PART 9
FOREST RESOURCE INVENTORIES

September 30, 2000

TABLE OF CONTENTS

PART 9 FOREST RESOURCE INVENTORY COMPONENT

Table 2b
Table 2b.1

Table 2: Inventory Status and Need by Business Driver

Region: Cariboo ________________, District ________

			Business Driver																									
			International			National			Strategic				Regional/Sub-Regional			Local							Operational Planning Regulations					
Inventory	**Type (Intensity)**	**Status**	Convention on Biological Diversity	Kyoto Protocol	Criteria + Indicators	National Forest Strategy	Canadian Biodiversity Strategy	National Forest Inventory	Land Use Charter (CORE)	Protected Areas Strategy Process	First Nations Treaty Negotiations	Identified Wildlife Management Strategy	Regional Land Use Planning	LRMP	Timber Supply Review on TSA's	Resource Management Zones	Landscape Units	Watershed Assessments	Riparian Assessments	Sensitive Areas	Recreation Features Sites	Ungulate Winter Ranges	Forest Development Plans	Silviculture Prescriptions	Range Use Plans	Stand Management Prescriptions	Road Design Regulations	Harvesting Regulations
Archaeology	AOA	B			M	M				M	M		L	M	L	L												
	AIS	C			M	M																						
Forest Health	forest health assessment	C			H	H								L	H	L							H			H		
	pest incidence surveys	C			M	M									M									M		M		
Karst	reconnaisance	N/A																										
	planning	N/A																										
Range	range ecosystem inventory	N/D			M	M							H	H	H		H						M					
	range cultural inventory	B									L												M					
Recreation	visual landscape inventory	C			L	L				L			L	M	L	M	M			L	H		M	L			L	L
	recreation opportunity	C			L	L				L	L		L	L	L	L	L			L	M							
	recreation features	B			L	L				L	L		L	M	L	M	M			L	L		L	L			L	L
Terrain (Stability) Mapping (including Soils)	Level E/D/C reconnaisance	C			H	H				H	L			M	H	H		M		M			H					
	Level C/B/A - detailed	C			H	H				L				M	L	L		H		H			H					
	TS Field Assessment	C																M						H		L		
Traditional Use	TU sites	C			M	M				L	H		M	M	L	L							H					
Vegetation Resources Inventory (VRI)	depletion update	C		H	H	H		H		H	H		H	H	H	H	H					H	H		H	H		
	retrofit to VRI standards	C		L	L	L		L							L		L											
	new photo estimation	C		H	H	H		H							H	H							H			H		
	ground sampling (timber)	C		H	H	H		H							H	H	H						H			H		
	ground sampling (full VRI)	C	M	M	M	M	M	M	M						M										M			
Growth and Yield	productivity assessment	B			H	H									H											H		
	growth model	C			H	H									H											H		
Ecoregion Mapping	ecoregion interpretations	A	M	M	M	M	M																					
Broad Ecosystem Inventory	BEI (BEC)	A	M		M	M	M		M	M	M	M		H	H		H											
Predictive Ecosystem Mapping*	PEM - Level 1 (overview)																											
	PEM - Level 2 (detailed)																											
Terrestrial Ecosystem Mapping*	TEM - Level R (overview)																											
	TEM - Level 5 (reconnaissance)																											
	TEM - Level 4 (intensive)																											
Rare Ecosystem Inventory	REI																											
BCF: Fish and Fish Habitat	summary (FISS)																											
	overview (1:50,000)																											
	reconnaisance (1:20,000)																											
	Intensive (1:5,000)																											
	species / population inv																											
	lake classification																											
Water Quality/Quantity	water quantity inventory																											
	water use inventory (comm w/s)																											
	water quality inventory																											
Wildlife and Wildlife Habitat	BEI interpretations																											
	TEM/PEM interpretations																											
	species presence																											
	species relative abundance																											
	species absolute abundance																											
	rare & endangered species																											

*Terrestrial Ecosystem Mapping has an alternative. Predictive with a lower level of intensity of Ecosystem Mapping (PEM) ground truthing. All have RIC standards

Legend:

A = Good status
B = Satisfactory status
C = Poor Status
n/d = not done
n/a = not applicable

H = Inventory is of high improtance to the Business Driver
M = Inventory is of moderate importance to the Business Driver
L = Inventory is of low importance to the Business Driver

Explicitly required by legislation / regulation
Implicitly required by legislation / regulation (interpretation involved)
Needed to set management objectives or for resource management
All or portion of inventory required for planning process
Information not currently required

DRAFT May 15, 2000

Table 2: Inventory Status and Need by Business Driver

Region: Cariboo - Refined Edition District:

Business Driver

			International			National			Strategic				Regional/Sub-Regional			Local							Operational Planning Regulations					
Inventory	**Type (Intensity)**	**Status**	Convention on Biological Diversity	Kyoto Protocol	Criteria + Indicators	National Forest Strategy	Canadian Biodiversity Strategy	National Forest Inventory	Land Use Charter (CORE)	Protected Areas Strategy Process	First Nations Treaty Negotiations	Identified Wildlife Management Strategy	Regional Land Use Planning	LRMP	Timber Supply Review on TSA's	Resource Management Zones	Landscape Units	Watershed Assessments	Riparian Assessments	Sensitive Areas	Recreation Features Sites	Ungulate Winter Ranges	Forest Development Plans	Silviculture Prescritpions	Range Use Plans	Stand Management Prescriptions	Road Design Regulations	Harvesting Regulations
Archaeology	AOA	B			M	M				M	M		L	M	L	L												
	AIS	C			M	M																						
Forest Health	forest health assessment	C			H	H								L	H	L							H			H		
	pest incidence surveys	C			M	M									M								H	M		M		
Karst	reconnaisance	N/A																										
	planning	N/A																										
Range	range ecosystem inventory	N/D			M	M							H	H	H		H						M					
	range cultural inventory	B									L												M					
Recreation	visual landscape inventory	C			L	L				L			L	M	L	M	M			L	H		M	L			L	L
	recreation opportunity	C			L	L				L	L		L	L	L	L	L			L	M							
	RECREATION TRAILS	C			L	L				L	L		L	M	L	M	M			L	L							
	recreation features	B			L	L				L	L		L	M	L	M	M			L	L		L	L			L	L
Terrain (Stability) Mapping (including Soils)	Level E/D/C reconnaisance	C			H	H				H	L			M	H	H		M		M			H	H				
	Level C/B/A - detailed	C			H	H				L				M	L	L		H		H			H	L				
	TS Field Assessment	C																M						H		L		
Traditional Use	TU sites	C			M	M				L	H		M	M	L	L							H					
Vegetation Resources Inventory (VRI)	depletion update	C		H	H	H		H		H	H		H	H	H	H	H					H	H		H	H		
	retrofit to VRI standards	C		L	L	L		L							L		L											
	new photo estimation	C		H	H	H		H							H	H							H			H		
	ground sampling (timber)	C		H	H	H		H							H	H	H						H			H		
	MONITORING GROUD SAMPLES	C		H	H	H		H							H	H	H						H			H		
	ground sampling (full VRI)	C	M	M	M	M	M	M	M						M										M			
Growth and Yield	productivity assessment	B			H	H									H											H		
	growth model	C			H	H									H											H		
Ecoregion Mapping	ecoregion interpretations	A	M	M	M	M	M										H	M	H	H	L	H	H	H	L	H	L	L
Broad Ecosystem Inventory	BEI (BEC)	A	M		M	M	M		M	M	M	M		H	H		H	M	H	H	L	H	H	H	L	H	L	L
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DRAFT May 15, 2000

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▨	All or portion of inventory required for planning process
▨	Information not currently required

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN

2001/2002

PART 10
RECREATION SITE AND TRAIL MAINTENANCE

September 30, 2000

CARIBOO FOREST REGION

INTERIM
RESOURCE MANAGEMENT PLAN
2001/2002

PART 11
RESEARCH

September 30, 2000

TABLE OF CONTENTS

PART 11 RESEARCH COMPONENT

11.1 Regional Research Issues and Concerns 4
  11.1.1 Biodiversity 4
  11.1.2 Reforestation 4
  11.1.3 Stand Tending 5
  11.1.4 Ecosystem Classification and Inventory 5
  11.1.5 Silvicultural Systems 5
  11.1.6 Hydrology 6
  11.1.7 Soil Conservation 6
  11.1.8 Wildlife Habitat Ecology 7
  11.1.9 Forest Health 7
  11.1.10 Extension 7
11.2 Regional Research Issues List 8
  11.2.1 Criteria and Indicators 8
    11.2.1.1 Issue #1 8
    11.2.1.2 Issue #2 9
    11.2.1.3 Issue #3 9
    11.2.1.4 Issue #4 10
    11.2.1.5 Issue #5 10
  11.2.2 Strengthening Sustainable Forest Management 12
    11.2.2.1 Issue #1 12
    Within 5 years Greater than 5 years 12
    11.2.2.2 Issue #2 12
    11.2.2.3 Issue #3 13
    11.2.2.4 Issue #4 13
    11.2.2.5 Issue #5 14
  11.2.3 Enhancing Environmental Values 14
    11.2.3.1 Issue #1 14
  Fire management, biodiversity strategy *14*
  - MOF *14*
  - MELP *14*
  - CFS *14*
  - Forest companies *14*
  - Small operators *14*
  - Cariboo horse loggers *14*
  CCLUP *14*
    11.2.3.2 Issue #2 15
  Logging and/or range use upstream from domestic water intakes *15*
  IDF, SBPS *15*
  - Local residents *15*
  - MELP *15*
  - Min. of Health *15*
  - MOF *15*
  - Ranchers *15*
    11.2.3.3 Issue #3 15
  Public involvement policies through FPC *15*
  All *15*
    11.2.3.4 Issue #4 16
  Riparian reserves not required on S.4,5,6 (small) streams *16*
  ICH, SBPS, SBS biogeoclimatic zones *16*
    11.2.3.5 Issue #5 16
  Forest Act, FP higher level planning, TSR *16*

All operable areas of the region *16*
Selected watersheds *16*
11.2.3.6 Issue #6 17
11.2.4 Sustainable Harvest *17*
11.2.4.1 Issue #1 17
11.2.4.2 Issue #2 18
11.2.4.3 Issue #3 18
11.2.4.4 Issue #4 19
11.2.4.5 Issue #5 19

11.1 Regional Research Issues and Concerns

There are ten research issues and concerns in the Cariboo Forest Region. Each one is listed and described below, with the associated current and long-term priorities included.

11.1.1 Biodiversity

Biodiversity is the diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them.

Current biodiversity priorities are:

- Document and analyze the landscape attributes of the major forested landscape types in the Cariboo Forest Region.
- Improve the understanding of the role of coarse woody debris and snags in forest ecosystems.
- Monitor the implementation of wildlife tree patch recommendations as implemented to date in the Cariboo Forest Region.

Long-term biodiversity priorities are:

- Test and evaluate the effectiveness of the FPC biodiversity guidebook and the CCLUP in maintaining biodiversity.
- Improve our understanding of:
  - habitat requirements and management options for "identified" wildlife and plant species in the Cariboo Forest Region;
  - the biological and operational effectiveness of wildlife tree patches;
  - the operational and biological effectiveness of various types and prescriptions for landscape connectivity; and
  - the attributes, ecological roles and management options for various old forest types in the Cariboo Forest Region.

11.1.2 Reforestation

Reforestation research includes evaluating techniques and producing guidelines to reforest disturbed areas while maintaining long-term site productivity and integrating forest resource uses.

Current reforestation priorities are:

- Evaluate the potential for hardwood reforestation across a number of subzones in the Cariboo Forest Region.
- Continue work on existing site preparation trials.
- Develop and evaluate reforestation techniques within a variety of silvicultural systems.

Long-term reforestation priorities are:

- Develop, test and monitor reforestation techniques that will assist in meeting the management goals for the forest land base in the Cariboo Forest Region.

11.1.3 Stand Tending

Stand tending refers to developing and assessing vegetation management, thinning and hardwood/mixedwood treatment options to meet integrated resource management objectives.

Current stand tending priorities are:

- Develop management options for over-dense, fire-originated stands over 25 years old.
- Develop management strategies for mixedwood and hardwood forests in the Cariboo Forest Region.
- Test the feasibility of commercial thinning in the Cariboo Forest Region.
- Continue monitoring of established vegetation management trials.
- Continue work on the interim free-growing guidelines.

Long-term stand tending priorities are:

- Develop, test and monitor stand tending techniques that will enhance the forest land base, in accordance with local and provincial management objectives.

11.1.4 Ecosystem Classification and Inventory

This issue refers to refining the biogeoclimatic ecosystem classification, classifying sites, and developing interpretive guidelines for integrated resource management.

Current priorities for ecosystem classification and inventory are:

- Develop site series classifications and interpretive guidelines for forested, grassland and principal wetland ecosystems for biogeoclimatic units where currently lacking.

Long-term priorities are:

- Provide continued and ongoing support to operational staff through training and further development of interpretive materials.

11.1.5 Silvicultural Systems

A silvicultural system is a planned program of treatments throughout the life of the stand to achieve stand structural objectives based on integrated resource management goals. Silvicultural systems include harvesting, regeneration and stand-tending methods, or phases, and cover all activities for the entire length of a rotation or cutting cycle.

Current priorities for silvicultural systems are:

- Continue research trials for:
    - uniform shelterwood systems for even-aged Douglas-fir;
    - group selection systems to maintain caribou habitat in high elevation forests;

  - silvicultural systems to maintain northern caribou habitat in lodgepole pine forests; and
  - alternative silvicultural systems for Douglas-fir stands on heavy snowfall mule deer winter range.
- Implement and monitor operational scale adaptive management alternative silvicultural systems to address both the northern caribou and eastern high elevation caribou habitat concerns under the CCLUP.

Long-term silvicultural systems priorities are:

- Apply prescriptions to operational blocks.
- Install both research and operational trials to test the range of silvicultural systems in a variety of subzones (e.g. selection silvicultural systems in riparian management areas, in dry and wet subzones) and examine the effects on wildlife and hydrology.

11.1.6 Hydrology

Hydrology encompasses determining the effects of harvesting and roads on water quality and yield, erosion, sedimentation, ground water and snow, and developing guidelines for improved practices.

Current hydrology priorities are:

- Monitor suspended sediment and other factors affecting fish habitat in the Horsefly River.
- Monitor the effects of group selection silvicultural systems on snow accumulation and snow melt at a silvicultural systems research site in the ESSF, and continue to implement the research working plan.
- Begin the field component of stream temperature work in 1999 according to priorities developed in response to watershed assessments in the Horsefly River.

Long-term hydrology priorities are:

- Monitor suspended sediment and other factors affecting fish habitat in streams with high fisheries values.
- Characterize sediment yield from logging roads.
- Address the question of whether logging damages fish habitat by increasing peak stream flows.
- Provide guidelines for assessing and managing the impact of land use on stream temperature.

11.1.7 Soil Conservation

Soil conservation covers the evaluation of the long-term effects of management practices on forest soils and developing reclamation procedures and soil conservation guidelines to maintain site productivity.

Current priorities for soil conservation are:

- Refine methods to successfully rehabilitate and reforest landings.

- Determine the effects of soil compaction and removal of trees and organic matter on tree growth.
- Determine the effects of soil compaction in skid trails on seedling growth.
- Investigate a potential biocontrol for Armillaria root disease.
- Assess the role of woody debris in soil and long-term site productivity in the SBPS zone.
- Investigate pine mushroom ecology and distribution.

Long-term soil conservation priorities are:

- Determine the role of woody debris in soil, forest floor and long-term site productivity.
- Monitor and assess results of the Armillaria biocontrol trials.

11.1.8 Wildlife Habitat Ecology

Wildlife habitat ecology involves assessing habitat needs and developing guidelines that integrate the maintenance or enhancement of wildlife habitat with other resource values.

Current priorities for wildlife habitat ecology are:

- Investigate:
  - the effects of spacing on wildlife habitat in IDF stands;
  - habitat use of northern caribou in relation to harvesting activities;
  - silvicultural systems to maintain northern caribou habitat in lodgepole pine forests; and
  - group selection silvicultural systems to maintain caribou habitat in high elevation forests.
- Continue integrated management approaches and co-ordination for timber, mule deer and alternative silvicultural systems.
- Develop operational tools, including a standardized operational mapping system and field methodology to quantify the outcome of stand level prescriptions, to help implement coordinated management of mule deer and timber.

Long-term priorities for wildlife habitat ecology are:

- Evaluate the effectiveness of wildlife tree stubs and patches to maintain wildlife habitats.
- Integrate the management of problem forest types with the maintenance of wildlife habitat.

11.1.9 Forest Health

The forest health issue is the investigation of the implications of disease, insect, animal, abiotic and mycorrhizae influences in forest ecosystems and the development of guidelines for integrated management.

Current and long-term forest health priorities are:

- Study pine needle cast fungi, Armillaria root disease, and dwarf mistletoe in the Cariboo Forest Region.

11.1.10 Extension

The purpose of extension is to turn knowledge into practice, and to interpret and apply research results for resource managers and practitioners.

Current extension priorities are:

- Ensure government, industry and the public are fully knowledgeable on new forestry practices under the FPC and CCLUP, through participation in course/training and field workshops as required and requested.
- Maintain and improve information access and distribution through the Research section website.

Long-term extension priorities are:

- Provide continued and ongoing information on the Research section to forest managers and practitioners through extension notes, newsletters, Internet summaries and other means.

11.2 Regional Research Issues List

The following lists of the top research issues are provided for each of four strategic objectives—criteria and indicators (C&I), strengthening sustainable forest management (SSFM), enhancing environmental values (EEV) and sustainable harvest (SH). The lists are extracted from the summary of a workshop in Williams Lake on June 29, 2000, "Identifying Community Information Needs to Support Sustainability in BC's Natural Resource Sector."

11.2.1 Criteria and Indicators

11.2.1.1 Issue #1

Problem Statement for Resource or Issue of Concern	What are the indicators of functioning, healthy ecosystems, including practical and meaningful indicators for soil, water, and biodiversity?						
Management Practice or Policy affecting issue	• FPC and guidebooks • Resource extraction, uses, and associated planning activities						
Primary ecosystem	ALL – forests first, then others						
Key Partners	• CCFM • International: Environmental, governments • ALL						
Temporal Scale of importance	[✓ Immediate/urgent] Within 5 years Greater than 5 years But need for valid, verifiable indicators --------→ will take time -------------→						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International Ecosystem--→						
Specific links to strategic plan content	N/A						
Strategic Objectives	**SH** 2	**EEV** 2	**SSFM** 2	**C&I** 1	**VA**	**CO**	**WF**
Region: Cariboo Forest Region			**Mgmt. Unit: All**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • See Ken Soneff's R&D summary (from June 29 morning presentation in Williams Lake)							

11.2.1.2 Issue #2

Problem Statement for Resource or Issue of Concern	Are the components (indicators, implied or otherwise such as targets) of the CCLUP, including "resource emphasis zones," effective as indicators in a sustainable management plan?						
Management Practice or Policy affecting issue	• Sub-regional planning process • Landscape unit planning • FPC • Push towards certification						
Primary ecosystem	ALL						
Key Partners	• MOF, MELP, forest companies, First Nations, CLMA (Cariboo Lumber Manufacturers' Association), tourism, communities, ranching, etc.						
Temporal Scale of importance	[✓ Immediate/urgent] Within 5 years Greater than 5 years						
Spatial Scale	Stand/waterway Forest Landscape Watershed [✓ District] [✓ Region] Province International						
Specific links to strategic plan content	• CCLUP						
Strategic Objectives:	**SH**	**EEV**	**SSFM**	**C&I**	**VA**	**CO**	**WF**
			1	1			
Region: Cariboo Forest Region			**Mgmt. Unit: All**				

Are you aware of research in your region that addresses this problem? If so, please provide details.

- Tested at limited scale/scope in regards to certification only. (No research to indicate long-term sustainability.)
- Caribou – Mule deer Strategies

11.2.1.3 Issue #3

Problem Statement for Resource or Issue of Concern	Is there sufficient inventory information to develop a database for indicators, including a baseline for indicators like biodiversity? If not, what level of inventory is required (scale, detail, etc.)?						
Management Practice or Policy affecting issue	FPC + many related guidelines, regulations, and policies that utilize indicators						
Primary ecosystem	ALL						
Key partners	• Forest and land-related inventory groups (MOF, MELP, fisheries, etc.) • Conservation Data Centre • Federal resource inventories (NFI, Climate, Soils, Geology, etc.) • CCFM Committee • Various certification and related NGO-SFM groups • National Forest Inventory / National Forest Information System (pending its financial support)						
Temporal Scale of Importance	[✓ Immediate/urgent] Within 5 years Greater than 5 years (Because it is baseline)						
Spatial Scale	Stand/waterway Forest Landscape Watershed District [✓ Region] [✓ Province] International ←--- (i.e, from stand/waterway all the way up to either regional or provincial level)						
Specific links to strategic plan content	CCLUP, biodiversity strategies, various wildlife strategies						
Strategic Objectives)	**SH**	**EEV**	**SSFM**	**C&I**	**VA**	**CO**	**WF**
		2		1		3	
Region: Cariboo Forest Region			**Mgmt. Unit: All**				

Are you aware of research in your region that addresses this problem? If so, please provide details.

- A number of inventory-related projects, standard development (RIC) are starting to grapple with this
- BC Forest Resources Inventory Council has identified this issue in its strategy development
- Various certification-related initiatives are asking these inventory-information questions
- MOF experience on State of Environment reports
- See also Ken Soneff's R&D project summary (from June 29 morning presentation in Williams Lake)

11.2.1.4 Issue #4

<table>
<tr><td>Problem Statement for Resource or Issue of Concern</td><td colspan="7">What practical methods are needed to capture and incorporate multicultural, indigenous, and non-timber values into the C&I system?</td></tr>
<tr><td>Management Practice or Policy affecting issue</td><td colspan="7">• Higher level plans
• Delgamuukw decisions
• Treaty process
Certification (esp. FSC, CSA)</td></tr>
<tr><td>Primary ecosystem</td><td colspan="7">N/A</td></tr>
<tr><td>Key partners</td><td colspan="7">• CCFM
• First Nations
• Provincial Cabinet
• Non-timber users</td></tr>
<tr><td>Temporal Scale of importance</td><td colspan="7">Immediate/urgent [✓ Within 5 years] Greater than 5 years
←--ASAP</td></tr>
<tr><td>Spatial Scale</td><td colspan="7">Stand/waterway Forest Landscape Watershed District [✓ Region] Province International
("Region" here refers to traditional territory or non-timber use area)</td></tr>
<tr><td>Specific links to strategic plan content</td><td colspan="7">• C&I implementation plan/link (if they exist—if not, then very important to have these) to HLP's, TSR's, etc.</td></tr>
<tr><td>Strategic Objectives</td><td>SH</td><td>EEV</td><td>SSFM</td><td>C&I
1</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo Forest Region</td><td colspan="5">Mgmt. Unit: All</td></tr>
<tr><td colspan="8">Are you aware of research in your region that addresses this problem? If so, please provide details.
• No.</td></tr>
</table>

11.2.1.5 Issue #5

Problem Statement for Resource or Issue of Concern	How can the C&I system meaningfully inform and effect changes in the behaviour of different and often significant stakeholders sets (e.g., Vancouver metropolis)?
Management Practice or Policy affecting issue	• Provincial land use planning (high level CORE-like) • Provincial cabinet • Provincial land-use planning committee
Primary ecosystem	• ALL • Old growth forests are often the high profile ecosystems
Key partners	• Fed./Prov./Regional Government NGO's • Social change agents re education system • Media • Internet
Temporal Scale of importance	Immediate/urgent Within 5 years Greater than 5 years ←-----------------------------------ongoing-----------------------------------→
Spatial Scale	Stand/waterway Forest Landscape Watershed [✓ District Region Province] [✓ International]
Specific links to strategic plan content	• Establishing and quantifying higher-level core values

	• Higher-level indices (e.g., GDP, GDI)						
Strategic Objectives	**SH**	**EEV** 2	**SSFM**	**C&I** 1	**VA**	**CO** 3	**WF**
Region: Cariboo Forest Region			**Mgmt. Unit: All**				

Are you aware of research in your region that addresses this problem? If so, please provide details.

- Massachusetts Technology Collaborative Index of Innovation (as an example of a different index)
- Gross Domestic Index vs. GDP

11.2.2 Strengthening Sustainable Forest Management

11.2.2.1 Issue #1

Problem statement for resource or issue of concern	Are we successfully meeting the habitat requirements of key species (IWMS and CCLUP) and integrating with other species at the landscape and stand level?						
Management Practice or Policy affecting issue	CCLUP Strategies: (e.g. Cariboo Strategy, Mule deer strategy, grasslands, biodiversity, Integration Report) Riparian Management guidelines, IWMS						
Primary ecosystem	All (species dependent)						
Key partners	• Agencies • Forest industry • CCLUP Regional Resources Board						
Temporal Scale of importance	Immediate/Urgent X and ongoing for long term Within 5 years Greater than 5 years						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International All (species dependent see CCLUP species strategies and IWMS)						
Specific links to strategic plan content	E.g. LRMP, Land Use plan, timber supply review CCLUP, TSR, LUP						
Strategic Objectives:	**SH**	**EEV** X	**SSFM** X	**C&I**	**VA**	**CO**	**WF**

11.2.2.2 Issue #2

Problem statement for resource or issue of concern	What are the dynamics and ecosystem effects of natural disturbance regime/processes and how do we emulate the full range of natural disturbances of the stand and landscape level? This includes two dimensions: ecosystem function and management • Ecosystem function - maintaining biological legacies is an important aspect of ecosystem function; • Management – how can we use our knowle4dge of disturbance agents to more pre-emptively design management systems at stand and landscape level.						
Management Practice or Policy affecting issue	Silvicultural prescriptions, biodiversity guidebook, Salvage Harvesting Policies, FDPs, fire suppression						
Primary ecosystem	All (depends on type and size of natural disturbances)						
Key partners	• Agencies • forest industry • Cariboo Regional Resources Board						
Temporal Scale of importance	Immediate/Urgent X and ongoing over time Within 5 years Greater than 5 years						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International All ecosystem dependent on type and size of natural disturbances						
Specific links to strategic plan content	E.g. LRMP, Land use plan, timber supply review CCLUP, TSR, LUP						
Strategic Objectives	**SH**	**EEV** X	**SSFM** X	**C&I**	**VA**	**CO**	**WF**
Region:			**Mgmt. Unit:**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • Research on Landscape Pattern in IDF, SBPS, MS (MOF) • CWDE inventories and through Northern Interior Vegetation Management Association in IDF, SBS, ICH, ESSF (MOF)							

11.2.2.3 Issue #3

Problem statement for resource or issue of concern	What are the key attributes needed to maintain ecosystem function for each ecosystem (CWD, Old growth, Snags, Understory, Big trees, Species mix) and how do we create and maintain attributes through management practices at both landscape and stand levels?						
Management Practice or Policy affecting issue	Biodiversity guide, CWD Interim guidelines, CCLUP Integration Report						
Primary ecosystem	All BEC types						
Key partners	• Agencies • Forest Industry • CCLUP Regional Resources Board						
Temporal Scale of importance	Immediate/Urgent x and ongoing over time Within 5 years Greater than 5 years						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International All except international						
Specific links to strategic plan content							
Strategic Objectives	**SH**	**EEV** X	**SSFM** X	**C&I**	**VA**	**CO**	**WF**
Region:			**Mgmt. Unit:**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • Stand structure inventory (including deadwood) in IDF, ESSF (MOF) • CWD inventory in IDF, SBS, ESSF (MOF)							

11.2.2.4 Issue #4

Problem statement for resource or issue of concern	Do FPC guidelines - individually and collectively - give us what we need to maintain biodiversity (e.g. biodiversity guidelines, riparian, landscape unit planning guidebook, IWMS)?						
Management Practice or Policy affecting issue	Biodiversity guidebook, riparian guidebook, landscape unit planning guide, IWMS						
Primary ecosystem	All						
Key partners	• Agencies • Forest Industry • CCLUP Regional Resources Board						
Temporal Scale of importance	Immediate/Urgent Within 5 years Greater than 5 years X						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International All but international						
Specific links to strategic plan content	CCLUP, TSR, LUP						
Strategic Objectives	**SH**	**EEV** X	**SSFM** X	**C&I**	**VA**	**CO**	**WF**
Region:			**Mgmt. Unit:**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • Flammulated Owl Habitat Study – MOF/MELP – Cariboo Region • Analysis of Identified Wildlife Species – inventory, research and management needs – MOF/MELP Cariboo Region • 1 year FRBC funded completed							

11.2.2.5 Issue #5

Problem statement for resource or issue of concern	What alternative silvicultural systems are appropriate to meet various integrated management objectives (e.g. long term site productively and biodiversity)						
Management Practice or Policy affecting issue	FDP, silviculture prescriptions, TSR, Caribou Strategy, Mule deer Strategy, Visual Strategy, Lakes Classification						
Primary ecosystem	All except Alpine tundra						
Key partners	• Agencies • Forest Industry • CCLUP Regional Resources Board						
Temporal Scale of importance	Immediate/Urgent Within 5 years Greater than 5 years X and ongoing for the long term						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International						
Specific links to strategic plan content	CCLUP, TSR, LUP						
Strategic Objectives	**SH** X	**EEV**	**SSFM** X	**C&I**	**VA**	**CO**	**WF**
Region:				**Mgmt. Unit:**			
Are you aware of research in your region that addresses this problem? If so, please provide details. 1. Caribou Research- Mountain and Northern – MOF – Cariboo Region EP1208/EP1104.01* 2. Mule Deer Research – IDF/SBS/ICH – MOF – Cariboo Region EP903/EP1149* 3. Identified Wildlife Species and Problem Analysis in the IDFxm MOF, MOELP funded for 1 year by FRBC * currently funded by FRBC through SCBC							

11.2.3 Enhancing Environmental Values

11.2.3.1 Issue #1

Problem statement for resource or issue of concern	How do we increase and incorporate our knowledge of natural disturbance regimes (fire, insect, disease) in ecosystem management and restoration?						
Management Practice or Policy affecting issue	Fire management, biodiversity strategy						
Primary ecosystem	IDF, SBS, SBPS – key BEG. Also most others.						
Key partners	• MOF • MELP • CFS • Forest companies • Small operators • Cariboo horse loggers						
Temporal Scale of importance	[✓ Immediate/Urgent ←→ Within 5 years] Greater than 5 years Within IDF.						
Spatial Scale	Stand/waterway Forest [✓ Landscape] Watershed District Region Province International						
Specific links to strategic plan content	CCLUP						
Strategic Objectives (tick 1 that best applies):	**SH**	**EEV** 1	**SSFM** 2	**C&I**	**VA**	**CO** 2	**WF**
Region: Cariboo				**Mgmt. Unit:**			
Are you aware of research in your region that addresses this problem? If so, please provide details. • Regional research within IDF and SBPS – MOF							

11.2.3.2 Issue #2

<table>
<tr><td colspan="2">Problem statement for resource or issue of concern</td><td colspan="7">What are the effects of timber harvesting and range use on pathogens in surface water?</td></tr>
<tr><td colspan="2">Management Practice or Policy affecting issue</td><td colspan="7">Logging and/or range use upstream from domestic water intakes</td></tr>
<tr><td colspan="2">Primary ecosystem</td><td colspan="7">IDF, SBPS</td></tr>
<tr><td colspan="2">Key partners</td><td colspan="7">• Local residents
• MELP
• Min. of Health
• MOF
• Ranchers</td></tr>
<tr><td colspan="2">Temporal Scale of importance</td><td colspan="7">[✓ Immediate/Urgent ←→ Within 5 years] Greater than 5 years</td></tr>
<tr><td colspan="2">Spatial Scale</td><td colspan="7">Stand/waterway Forest Landscape [✓ Watershed] District Region Province International</td></tr>
<tr><td colspan="2">Specific links to strategic plan content</td><td colspan="7">Eg. LRMP, Land Use plan, timber supply review
Auditor General's Report on Drinking Water</td></tr>
<tr><td colspan="2">Strategic Objectives (tick 1 that best applies):</td><td>SH</td><td>EEV
X</td><td>SSFM</td><td>C&I</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo Chilcotin</td><td colspan="6">Mgmt. Unit:</td></tr>
<tr><td colspan="9">Are you aware of research in your region that addresses this problem? If so, please provide details.
• Primary study in 1995 showing a possible link (Cariboo Region Research Hydrologist)</td></tr>
</table>

11.2.3.3 Issue #3

<table>
<tr><td colspan="2">Problem statement for resource or issue of concern</td><td colspan="7">What do people in this region want from their forests, and what tradeoffs are they willing to make to get it?</td></tr>
<tr><td colspan="2">Management Practice or Policy affecting issue</td><td colspan="7">Public involvement policies through FPC</td></tr>
<tr><td colspan="2">Primary ecosystem</td><td colspan="7">All</td></tr>
<tr><td colspan="2">Key partners</td><td colspan="7">• Quesnel River Watershed Alliance
• Cariboo Chilcotin. Conservation Society
• Regional watershed groups
• Fraser Basin Council</td></tr>
<tr><td colspan="2">Temporal Scale of importance</td><td colspan="7">[✓ Immediate/Urgent] Within 5 years [✓ Greater than 5 years]</td></tr>
<tr><td colspan="2">Spatial Scale</td><td colspan="7">Stand/waterway Forest Landscape Watershed District [✓ Region] Province International</td></tr>
<tr><td colspan="2">Specific links to strategic plan content</td><td colspan="7">CCLUP, sub-regional plans</td></tr>
<tr><td colspan="2">Strategic Objectives</td><td>SH</td><td>EEV
X</td><td>SSFM</td><td>C&I</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo Chilcotin</td><td colspan="6">Mgmt. Unit: All</td></tr>
<tr><td colspan="9">Are you aware of research in your region that addresses this problem? If so, please provide details.
• SFU Social Science research REM (Wolfgang Haider) on trade-off models.</td></tr>
</table>

11.2.3.4 Issue #4

<table>
<tr><td>Problem statement for resource or issue of concern</td><td colspan="7">How do we predict stream temperature changes as a function of riparian logging and re-vegetation and how do we predict the effects on fish?</td></tr>
<tr><td>Management Practice or Policy affecting issue</td><td colspan="7">Riparian reserves not required on S.4,5,6 (small) streams</td></tr>
<tr><td>Primary ecosystem</td><td colspan="7">ICH, SBPS, SBS biogeoclimatic zones</td></tr>
<tr><td>Key partners</td><td colspan="7">• MELP
• DFO
• MOF
• Quesnel River Watershed Alliance
• Possibly UBC & UNBC</td></tr>
<tr><td>Temporal Scale of importance</td><td colspan="7">[✓ Immediate/Urgent] [✓ Within 5 years] Greater than 5 years
Need is urgent. 5-10 years to fully address.</td></tr>
<tr><td>Spatial Scale</td><td colspan="7">Stand/waterway Forest Landscape [✓ Watershed] District Region Province International</td></tr>
<tr><td>Specific links to strategic plan content</td><td colspan="7">LRMP, CCLUP, (FPC)</td></tr>
<tr><td>Strategic Objectives</td><td>SH</td><td>EEV
X</td><td>SSFM</td><td>C&I</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo Chilcotin</td><td colspan="5">Mgmt. Unit:</td></tr>
<tr><td colspan="8">Are you aware of research in your region that addresses this problem? If so, please provide details.
• MOF region, very preliminary in base budget
• UNBC research (Master's thesis)</td></tr>
</table>

11.2.3.5 Issue #5

<table>
<tr><td>Problem statement for resource or issue of concern</td><td colspan="7">We need a cost/benefit analysis (economic, social, ecological) of low impact (horse logging, quad, cable) harvest methods in selected watersheds of Cariboo-Chilcotin.</td></tr>
<tr><td>Management Practice or Policy affecting issue</td><td colspan="7">Forest Act, FP higher level planning, TSR</td></tr>
<tr><td>Primary ecosystem</td><td colspan="7">All operable areas of the region</td></tr>
<tr><td>Key partners</td><td colspan="7">• MOF
• MELP
• Min. of Small Business (etc.),
• Min. of Community Development,
• Cooperatives and volunteers
• Cariboo Horse Loggers Assn.</td></tr>
<tr><td>Temporal Scale of importance</td><td colspan="7">[✓ Immediate/Urgent] Within 5 years Greater than 5 years</td></tr>
<tr><td>Spatial Scale</td><td colspan="7">Stand/waterway Forest Landscape [✓ Watershed] District [✓ Region] Province International
<i>Selected watersheds</i></td></tr>
<tr><td>Specific links to strategic plan content</td><td colspan="7">Eg. LRMP, Landuse plan, timber supply review</td></tr>
<tr><td>Strategic Objectives</td><td>SH</td><td>EEV
1</td><td>SSFM</td><td>C&I</td><td>VA
2</td><td>CO
2</td><td>WF
2</td></tr>
<tr><td colspan="3">Region: Cariboo Chilcotin</td><td colspan="5">Mgmt. Unit:</td></tr>
<tr><td colspan="8">Are you aware of research in your region that addresses this problem? If so, please provide details.
N/A</td></tr>
</table>

11.2.3.6 Issue #6

Problem statement for resource or issue of concern	How do we identify and better understand the risks and benefits of alternative silviculture (partial cutting) for sustainable management?						
Management Practice or Policy affecting issue	FPC, uncertainties leading to reluctance to prescribe alternative systems, desire to minimize logging costs on the part of prescribing foresters						
Primary ecosystem	Riparian – all BEC units Wildlife winter range (identified) – ESSF, MS, IDF						
Key partners	MOF, MELP, forest industry, consulting industry						
Temporal Scale of importance	[✓ Immediate/Urgent] Within 5 years Greater than 5 years						
Spatial Scale	[✓ Stand/waterway Forest Landscape] Watershed District Region Province International						
Specific links to strategic plan content	CCLUP						
Strategic Objectives	**SH**	**EEV** X	**SSFM** X	**C&I**	**VA**	**CO**	**WF**
Region: Cariboo Chilcotin				**Mgmt. Unit:**			
Are you aware of research in your region that addresses this problem? If so, please provide details. • MOF regional research – silvicultural systems research – ESSF, MS, SBS, ICH							

11.2.4 Sustainable Harvest

11.2.4.1 Issue #1

Problem statement for resource or issue of concern	What partial cutting systems are appropriate (i.e. .for integrated use objectives) in the Cariboo Forest Region and what are their implications for growth and yield and wood quality?						
Management Practice or Policy affecting issue	Forest Practices Code and Land Use Management. Plans including Mule Deer Winter Range; Visual Quality Objectives; Riparian Management Guidelines; Traditional Use Values; Soil Conservation Guidelines						
Primary ecosystem	Interior Douglas Fir; ESSF; ICH; SBS						
Key partners	Refer to CCLUP list of partners; basically everyone within the region.						
Temporal Scale of importance	Immediate/Urgent and greater than 5 years; start now to get results later.						
Spatial Scale	Region Province International and National						
Specific links to strategic plan content	CCLUP; TSR (Western Supply Blocks- Anahim Round Table)						
Strategic Objectives	**SH** Yes	**EEV**	**SSFM**	**C&I**	**VA**	**CO**	**WF**
Region: Cariboo				**Mgmt. Unit:**			
Are you aware of research in your region that addresses this problem? If so, please provide details. • UBC, MOF, Weldwood collaborative project • Experimental shelterwood in the Wetbelt trial • Beetle-proofing trial at 99 mile- CFS • Alternate silvicultural systems trial in wetbelt, UBC Alex Fraser Research Forest • Weldwood trials • MOF Trials- Silvicultural Systems							

11.2.4.2 Issue #2

<table>
<tr><td>Problem statement for resource or issue of concern</td><td colspan="7">What is the growth and yield of young stands starting from the time of establishment under a range of treatment regimes, across different biogeoclimatic zones; and, can established research trials contribute to initial G&Y estimates?</td></tr>
<tr><td>Management Practice or Policy affecting issue</td><td colspan="7">To verify increases in G&Y of second growth stands to confirm AAC. Silviculture Regimes.</td></tr>
<tr><td>Primary ecosystem</td><td colspan="7">All forested ecosystems.</td></tr>
<tr><td>Key partners</td><td colspan="7">• Industry
• MOF
• G&Y co-operative
• Forest Productivity Council</td></tr>
<tr><td>Temporal Scale of importance</td><td colspan="7">Immediate/Urgent to Greater than 5 years . Need long term trials. Immediate is overdue but could collect data from existing trials now.</td></tr>
<tr><td>Spatial Scale</td><td colspan="7">District Region. Need local information.</td></tr>
<tr><td>Specific links to strategic plan content</td><td colspan="7">CCLUP; TSR to ensure correct calculation of AAC.</td></tr>
<tr><td>Step 8. Strategic Objectives</td><td>SH
Yes</td><td>EEV</td><td>SSFM</td><td>C&I</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo</td><td colspan="5">Mgmt. Unit: WLTSA</td></tr>
<tr><td colspan="8">Are you aware of research in your region that addresses this problem? If so, please provide details.
• TRENDS monitoring plots established in limited number of treatment regimes. Established research trials can provide some data.</td></tr>
</table>

11.2.4.3 Issue #3

<table>
<tr><td>Problem statement for resource or issue of concern</td><td colspan="7">As the FPC guidelines are continually evolving, based in the best information available at the time, what further information is required to refine current FG guidelines with respect to allowable hardwood densities in conifer stands, maximum conifer density and mixedwood stands?</td></tr>
<tr><td>Management Practice or Policy affecting issue</td><td colspan="7">FG guidelines; FPC Silviculture regulations</td></tr>
<tr><td>Primary ecosystem</td><td colspan="7">SBPS; SBS; ICH; IDF</td></tr>
<tr><td>Key partners</td><td colspan="7">• Industry
• MELP
• MOF
• Trappers
• First Nations</td></tr>
<tr><td>Temporal Scale of importance</td><td colspan="7">Immediate/Urgent Stands currently entering FG window.</td></tr>
<tr><td>Spatial Scale</td><td colspan="7">District Region ASDM</td></tr>
<tr><td>Specific links to strategic plan content</td><td colspan="7">CCLUP- biodiversity issue; TISC-treatment regimes.</td></tr>
<tr><td>Strategic Objectives</td><td>SH
Yes</td><td>EEV</td><td>SSFM</td><td>C&I</td><td>VA</td><td>CO</td><td>WF</td></tr>
<tr><td colspan="3">Region: Cariboo</td><td colspan="5">Mgmt. Unit:</td></tr>
<tr><td colspan="8">Are you aware of research in your region that addresses this problem? If so, please provide details.
• Retrospective study in IDFdk3 and SBSdw1 and 3 permanent trials are providing initial information.</td></tr>
</table>

11.2.4.4 Issue #4

Problem statement for resource or issue of concern	How can we increase wood volume and quality through the use of genetic breeding or introduced species? How can we maintain acceptable levels of natural diversity that will satisfy the public and the certification process?						
Management Practice or Policy affecting issue	Forest Practices Code: 1) Free growing guidelines do not list introduced species as acceptable; 2) seed and vegetative materials guidelines state you must use the "best" genetic quality (i.e. orchard) seed which may be perceived as reducing natural diversity; and 3) Certification Process wants natural diversity.						
Primary ecosystem	SBS; ICH; ESSF						
Key partners	• Industry • MOF • Forest Genetics Council • Small Business Program • Universities						
Temporal Scale of importance	Immediate/Urgent to Greater than 5 years. Monitor existing progress; ID stock not tested						
Spatial Scale	Region and Province. Climate dependent.						
Specific links to strategic plan content	CCLUP; FRBC Tree Improvement Plan; TSR						
Strategic Objectives (tick 1 that best applies):	**SH** Yes	**EEV**	**SSFM**	**C&I**	**VA**	**CO**	**WF**
Region: Cariboo			**Mgmt. Unit:**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • Some information is available from current progeny trials, Clonal Trials (UNBC). Some MOF testing of Ponderosa Pine, Siberian Larch, White Pine is established. Realized Gain Trials, UBC.							

11.2.4.5 Issue #5

Problem statement for resource or issue of concern.	How do we monitor and detect potential natural disturbances in managed forests, (i.e. fire, insects, disease, climatic) and act to ameliorate their impacts (ecological, economic, socio-economic)?						
Management Practice or Policy affecting issue	Existing practices and policies are insufficient to address this.						
Primary ecosystem	All forested ecosystems in the region.						
Key partners	See CCLUP						
Temporal Scale of importance	Immediate/Urgent Within 5 years Greater than 5 years Includes full scale						
Spatial Scale	Stand/waterway Forest Landscape Watershed District Region Province International Full spatial scale						
Specific links to strategic plan content	CCLUP, TSR						
Strategic Objectives (tick 1 that best applies):	**SH** Yes	**EEV**	**SSFM**	**C&I**	**VA**	**CO**	**WF**
Region:			**Mgmt. Unit:**				
Are you aware of research in your region that addresses this problem? If so, please provide details. • CFS, UBC, MOF in region and licensees TFL 5 and TFL 52							